



Program Assessment Report

Program: Environmental Science Technology

Report Year: 2021-22

Drafted by Amanda Gilleland on Aug 30, 2022

Overall Introduction

In support of the mission of St. Petersburg College, faculty committees established thirteen value statements. Three of these value statements are:

Student Focus: We believe students are the heart of SPC! All SPC resources, decisions, and efforts are aligned to transform students' lives to empower them to finish what they start!

Academic Excellence: We promote academic excellence through interactive, innovative, and inquiry-centered teaching and learning.

Culture of Inquiry: We encourage a data-driven environment that allows for open, honest dialogue about who we are, what we do, and how we continue to improve student success.

It is the intent of St. Petersburg College to incorporate continuous improvement practices in all areas. Assessment reports provide comparisons of present and past results which are used to identify topics where improvement is possible. SPC has traditionally used past results as a vital tool in achieving its commitment to continuous improvement.

Program Learning Outcomes

#1: Scientifically interpret and apply the concepts, principles and theories that constitute aspects of environmental science.

I. Use of Past Results

Results of the 2012-13 Assessment Report:

One-hundred percent of students who completed their co-op in Fall 2012, Spring 2013 and Summer 2013 received a "met standards" rating or "exceeded standards" rating from their co-op site supervisor for possessing a good grasp of Environmental Science. Ninety percent of the students who completed their co-op in the Fall 2012, Spring 2013 and Summer 2013 received a "met standards" rating or "exceeded standards" rating from their co-op site supervisor for possessing a command of Environmental Science terminology and correct usage of it.

Results of the 2015-16 Assessment Report:

From Fall 2013 through Spring 2016, thirty-six students have completed their EVR 2949 co-op class. One student (2.8%) out of the total was rated "below standards" for this PLO, while the majority (97.2%) were rated as "met standards" or "exceeding standards." Students' ability to apply concepts, principles and theories within the workforce setting is an important outcome that reflects on overarching understanding of multiple topics and courses within the degree program. The results show that overall, students are meeting this standard.

Results of the 2018-19 Assessment Report:

From Fall 2016 through Spring 2019, thirty-three students have completed their EVR 2949 co-op class. One student (3%) out of the total was rated "below standards" for this PLO, while the majority (97%) were rated as "met standards" or "exceeding standards." Students' ability to apply concepts, principles and theories within the workforce setting is an important outcome that reflects on overarching understanding of multiple topics and courses within the degree program. The results show that overall, students are meeting this standard.

II. Methodology

Means of Assessment: The results of the co-op work experience class (EVR 2949) evaluation were used to assess students' mastery of this MLO in the Environmental Science program, prior to graduation.

Date(s) of Administration: Each semester from Fall 2019 through Summer 2022

Method: Students are required to complete a co-op work experience class (EVR 2949) as part of their graduation requirements. They must complete 120 hours of work at an approved site based on their chosen sub-plan. The student is expected to apply knowledge gained throughout prior coursework while performing duties as assigned.

Assessment Instrument: The assessment instrument consists of a grading rubric completed by the site-supervisor at the student's completion of 120 hours. Students will be rated as "below standards", "met standards" or "exceeded standards" on "possesses good grasp of environmental science", and "possesses command of environmental science terminology and uses it correctly".

Population: Students enrolled in EVR 2949 (Co-op Work Experience)

III. Criteria for Success

The criteria are deemed to have been successfully met if the student is rated as "met standards" or "exceeded standards" on the site-supervisor's completed evaluation.

IV. Summary of Assessment Findings

Results via Face-to-Face

	Total # Students	# students "below standards"	# students "met standards"	# students "exceeded standards"
Fall 2019-Summer 2020	7	0	1	6
Fall 2020-Summer 2021	15	0	4	11
Fall 2021-Summer 2022	9	0	1	8

Results via Distance Delivery (Online, Blended, etc)

The course used to assess PLO 1 was taught exclusively face-to-face and did not include online sections.

V. Discussion and Analysis of Assessment Findings

From Fall 2019 through Summer of 2022, thirty-one students have completed their EVR 2949 co-op class. No students were rated "below standards" for this PLO, while the majority (100%) were rated as "met standards" or "exceeding standards." Students' ability to apply concepts, principles and theories within the workforce setting is an important outcome that reflects on overarching understanding of multiple topics and courses within the degree program. The results show that overall, students are meeting this standard

#2: Evaluate environmental risks and develop plans to address their effects using current methodology and technology.

I. Use of Past Results

Results of the 2012-13 Assessment Report:

One-hundred percent of students who completed their co-op in Fall 2012, Spring 2013 and Summer 2013 received a "met standards" rating or "exceeded standards" rating from their co-op site supervisor for demonstrating the ability to evaluate problems and identify areas that need to be addressed.

Results of the 2015-16 Assessment Report:

From Fall 2013 through Spring 2016, thirty-six students have completed their EVR 2949 co-op class, and thirty-four received an evaluation mark from their site-supervisor for this PLO. One student (2.9%) out of the total was rated

"below standards" for this PLO, while the majority (97.1%) were rated as "met standards" or "exceeding standards." The co-op work experience course focuses in on their chosen sub-plan and associated representative tasks within that subfield. The results show that overall, students are meeting this standard.

Results of the 2018-19 Assessment Report:

From Fall 2016 through Spring 2019, thirty-three students have completed their EVR 2949 co-op class, and thirty-four received an evaluation mark from their site-supervisor for this PLO. One student's evaluation in Spring 2017 for this PLO was rated as "non-applicable" by the site supervisor. No students out of the total were rated "below standards" for this PLO, and all with rated as "met standards" or "exceeding standards." The co-op work experience course focuses in on their chosen sub-plan and associated representative tasks within that subfield. The results show that overall, students are meeting this standard.

II. Methodology

Means of Assessment: The results of the co-op work experience class (EVR 2949) evaluation were used to assess students' mastery of this MLO in the Environmental Science program, prior to graduation. *Note: prior action plan included changing this means of assessment, but course since course is taken by students both enrolled in the AS Environmental Science and general AA students, the Program Administrator M. Scanlon felt this was not an accurate measurement.

Date(s) of Administration: Each semester from Fall 2019 through Summer 2022

Method: Students are required to complete a co-op work experience class (EVR 2949) as part of their graduation requirements. Students must complete 120 hours working at an approved site based on their chosen sub-plan. The student is expected to apply knowledge gained throughout prior coursework while performing duties as assigned.

Assessment Instrument: The assessment instrument consists of a grading rubric completed by the site-supervisor at student's completion of the 120 hours. Students will be rated on "demonstrates the ability to evaluate problems and identify areas that need to be addressed".

Population: Students enrolled in EVR 2949 (Co-op Work Experience)

III. Criteria for Success

The criteria are deemed to have been successfully met if the student is rated as "met standards" or "exceeded standards" on the site-supervisor's completed evaluation.

IV. Summary of Assessment Findings

Results via Face-to-Face

	Total # Students	# students "below standards"	# students "met standards"	# students "exceeded standards"
Fall 2019-Summer 2020	7	0	1	6
Fall 2020-Summer 2021	15	0	5	10
Fall 2021-Summer 2022	9	0	1	8

V. Discussion and Analysis of Assessment Findings

From Fall 2019 through Summer of 2022, thirty-one students have completed their EVR 2949 co-op class. No students out of the total were rated "below standards" for this PLO, and all with rated as "met standards" or "exceeding standards." The co-op work experience course focuses in on their chosen sub-plan and associated representative tasks within that subfield. The results show that overall, students are meeting this standard

#3: Evaluate the role of environmental policies, laws and management practices on the changes in a local ecosystem over a defined period of time.

I. Use of Past Results

Results of the 2012-13 Assessment Report:

In the Fall 2012 semester, the majority of students (80%) met the criteria, as they earned a 70% or higher on the environmental policy paper. In the Spring 2013 semester, a smaller number of students (72%) met the criteria, by scoring a 70% or higher on the environmental policy paper. In the Summer 2013 semester, the majority of students (80%) met the criteria, as they earned a 70% or higher on their environmental policy paper.

Results of the 2015-16 Assessment Report:

The course has been offered every semester. In the semesters Spring 2015-Summer 2015, the majority of students (87.5%) met the criteria, as they earned a 70% or higher on the environmental policy paper. During the semesters of Fall 2015-Spring 2016, a smaller number of students (74.4%) met the criteria, by scoring a 70% or higher on the environmental policy paper.

Results of the 2018-19 Assessment Report:

The course has been offered almost every semester between Fall 2016-Spring 2019. Enrollment has been relatively strong due to students outside the AS Environmental Science Technology degree program taking the course (a number of BAS Sustainability Mgmt students elect to take this course). Between Fall 2016-Spring 2019, 100 students took the course either online or face to face, with a combined 83% success rate (earning a C or better on the term paper).

II. Methodology

Means of Assessment: The results of a term paper within the EVR 1858 Environmental Regulation and Compliance course were used to assess students' mastery of this MLO in the Environmental Science program, prior to graduation.

Date(s) of Administration: Each semester from Fall 2019 through Summer 2022

Method: Students are required to complete a term paper on an assigned topic relating to existing regulation. The student is expected to research applicable policies, laws and management practices as they pertain to the topic. The student will provide implications related to ecosystem changes and policy and practice that occurred because of the enacted legislation over a given period of time.

Assessment Instrument: The project paper is graded on a scale from 0-100%

Population: Students enrolled in EVR 1858 (Environmental Regulation and Compliance).

III. Criteria for Success

The criteria are deemed to have been successfully met if the student achieves a score of 70% or better on their final project. The maximum score a student can obtain is 100%.

IV. Summary of Assessment Findings

Results (Blended classes)

	Total # Students	# students below 70%	# of students 70-79%	# students 80-89%	# student 90-100%
Fall 2019-Summer 2020	31	3	0	2	26
Fall 2020-Summer 2021	23	5	3	3	12
Fall 2021-Summer	23	2	0	1	20

V. Discussion and Analysis of Assessment Findings

The course has been offered once a year in the Spring semester in blended format between Fall 2019-Summer 2022. Enrollment has been relatively strong due to students outside the AS Environmental Science Technology degree program taking the course (a number of BAS Sustainability Mgmt students elect to take this course). Between Fall 2019-Summer 2022, 77 students took the course, with a combined 87% success rate (earning a C or better on the term paper).

VI. Action Plan and Timetable for Implementation

Based on the analysis of the results the following Action Plan Items have been selected for implementation:

- [Some students aren't turning in the assignment. Re-evaluate the assignment used for this assessment.](#)
- Amanda Gilleland / Jun 2023

#4: Systematically apply field testing and field measurement collection practices in an ecosystem.

I. Use of Past Results

Results of the 2012-13 Assessment Report:

Ninety percent of students who completed their co-op in Fall 2012, Spring 2013 and Summer 2013 received a "met standards" rating or "exceeded standards" rating from their co-op site supervisor for demonstrating a working knowledge of the assigned environmental science duties.

One hundred percent of the students who completed their co-op in the Fall 2012, Spring 2013 and Summer 2013 received a "met standards" rating or "exceeded standards" rating from their co-op site supervisor for demonstrating a working knowledge of related equipment and their correct usage.

Results of the 2015-16 Assessment Report:

EVR 2892c has been offered every Spring and Summer semester. Enrollment in the course has increased as the number of students enrolled in the program are progressing through their required coursework. The class is a lecture and laboratory / field course which enables students hands-on experience in the field using equipment and techniques taught in the course. Spring 2015, 93% of students successfully completed their field notebook assignment with a grade of 70% or above. Summer 2015, 100% of students completed the assignment at 70% or above, and in Spring 2016, 73% of students completed the assignment with a score of 70% or above.

Results of the 2018-19 Assessment Report:

EVR 2892c has been reduced to being offered regularly once once a year due to low enrollment in the course. The class is a lecture and laboratory / field course which enables students hands-on experience in the field using equipment and techniques taught in the course, which can be a limiting factor for students who work full time during the day. Forty-one student have taken the course between Fall 2016-Spring 2019. Only two students during this time frame were graded below 70%, representing a 95% success rate.

II. Methodology

Means of Assessment: Field assignments found in EVR 2892c (Environmental Sampling & Analysis) were utilized to assess this PLO.

Date(s) of Administration: Each semester from Fall 2019 through Summer 2022

Method: Students are required to complete EVR 2892c Environmental Sampling and Analysis prior to graduating. Students enrolled in this course learn and conduct field collections utilizing a variety of methods and equipment. Results are recorded in a field notebook which is graded by the instructor.

Assessment Instrument: The assessment instrument consists of a field notebook which is utilized multiple times during the course during field and lab exercises. Students record their findings in the notebook, which is evaluated by the instructor on a percentage basis.

Population: Students enrolled in EVR 2892c Environmental Sampling and Analysis.

III. Criteria for Success

The criteria are deemed to have been successfully met if the student achieves a score of 70% or better on their field notebook. The maximum score a student can obtain is 100%

IV. Summary of Assessment Findings

Results via Face-to-Face

	Total # Students	# students below 70%	# students 70-79%	# students 80-89	# of students 90-100%
Fall 2019-Summer 2020	23	1	0	4	18
Fall 2020-Summer 2021	13	1	1	1	10
Fall 2021-Summer 2022	10	4	2	1	4

V. Discussion and Analysis of Assessment Findings

EVR 2892c is only being offered once once a year in the Spring due to low enrollment in the course, and the modality has changed to blended as opposed to exclusively face to face in an effort to allow more student flexibility. The class is a lecture and laboratory / field course which enables students hands-on experience in the field using equipment and techniques taught in the course, which can be a limiting factor for students who work full time during the day. 46 students have taken the course between Fall 2019-Summer 2022. Six students during this time frame were graded below 70%, representing a 87% success rate.

VI. Action Plan and Timetable for Implementation

Based on the analysis of the results the following Action Plan Items have been selected for implementation:

- Identify which components of student's field notebooks are needing improvements, if there is a commonality, and provide structure and/or examples of idealized work.
- Amanda Gilleland / Jun 2023

Action Plan

Category	Action Plan Detail / Implications	For PLO	Responsible Party / Due Date
A. Enable Greater Student Success			
A1. Identify needs and address ways to improve overall student success			
	Some students aren't turning in the assignment. Re-evaluate the assignment used for this assessment.	#3	Amanda Gilleland Jun 2023
	Identify which components of student's field notebooks are needing improvements, if there is a commonality, and provide structure and/or examples of idealized work.	#4	Amanda Gilleland Jun 2023

Evaluation of the Impact of Action Plan Items on Program Quality

Student success in obtaining employment after graduation in the field is improved through networking gained through the co-op work experience and utilizing career services available. The coordination between internship and career services staff in coordination with the program administration helps better prepare and coach students through the EVR 2949 co-op work experience class. Participation in EVR 2949 enables them to have a better understanding of workforce demands and application of knowledge and skills learned in the degree program.

Employers value communication skills and knowledge of current applicable laws and regulations in the field; successful completion of a term paper, and knowing research, revision, and editing practices improve this skill. Making student aware of assistance in these areas should improve the success rate of completion of a term paper analyzing a specific applicable topic for this learning outcome.

Continued improvement in equipment for the environmental sampling course to meet current workforce needs will improve student preparedness as they complete their co-op work experience class, apply for jobs, and enter the workforce after graduation.

Approvals

Program Administrators:

Amanda Gilleland - Chair, Natural Science

Maura Scanlon - Faculty - Biology/Environmental Sustainability

Approved by Amanda Gilleland - Chair, Natural Science on Aug 30, 2022

Educational Outcomes Coordinators:

Amy Eggers - Coord, Accredtn&BaccAssessment

Magaly Tymms - Assessment Director

Approved by Amy Eggers - Coord, Accredtn&BaccAssessment on Aug 30, 2022

Dean:

Natavia Middleton - Dean, Natural Science & Engr

Approved by Natavia Middleton - Dean, Natural Science & Engr on Aug 30, 2022

Senior Vice President:

Sabrina Crawford - AVP, Institutional Eff Acad Srv

Approved by Sabrina Crawford - AVP, Institutional Eff Acad Srv on Aug 30, 2022