

CTE Annual Assessment Report Template

The purpose of CTE program-level assessment at PCC is to look at student achievement of degree and certificate-level outcomes and to help faculty focus on how to improve student learning based on assessment.

Please choose one of the program outcomes that was part of this year's Summary Data Report, and provide a more in-depth explanation of your assessment process, results and how this might be used to enhance teaching and learning.

This form is to be used for assessments (first time the outcome is assessed) and for re-assessments (a follow-up for the initial assessment of the same outcome).

Upon completing the form, please e-mail it to learningassessment@pcc.edu.

The text boxes will expand to accommodate as much text as you wish to provide.

SAC Assessment Contact (s):

<i>Name</i>	<i>e-mail</i>
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1. What SAC do you represent?

Geography / GIS

2. Before reporting on this year's assessment, please briefly reflect on last year's project. On the last page of the Learning Assessment Peer Review Feedback from summer 2019, the peer evaluators created a custom question or two for your SAC. Please cut and paste that question in the box below, and add your SAC's response to the question(s). In future years, the custom question will be embedded in the annual program review update.

1. Has the SAC contacted the exam publisher to request what a passing score is?
We have not contacted the exam publisher and since we are shifting our assessment project (no longer using the exam) this will not be necessary.

2. How will the SAC continue to improve student learning based on this assessment outcome data?

Because of some issues with the test questions and a shift to an entirely new version of the GIS software program we use in our classes, we decided to pause on this current assessment method and focus more on the full GIS Program Outcomes using student Map Portfolios. Our new focus on Portfolios will allow us to look at just the students who are actually completing the

GIS Certificate, not students in any one of our GIS classes. This is a worthwhile shift because we tend to get students from other disciplines (Environment Science or Engineering, for example) that only take one or two classes in our program.

3. Which outcome is reported here for 2019-20? (Please provide the text of the focal outcome, and the degrees/certificates to which it applies.)

All four outcomes tie to the Geographic Information Systems (GIS) Less than-one-year Certificate.

Communicate geographic information, verbally and graphically, to a variety of audiences using geographic tools and technologies.

Analyze critically geographic problems and questions.

Collect, create, analyze, and document geographic information for various applications and disciplines.

Use geographic concepts and GIS technologies to input, store, query, and retrieve spatial and attribute data.

4. Please share how this outcome was assessed, to help us understand your process for assessment. Please include information about your benchmark (the score that indicates successful attainment of the outcome) and how it was determined. For example, if your benchmark is set at 2, what does that mean?

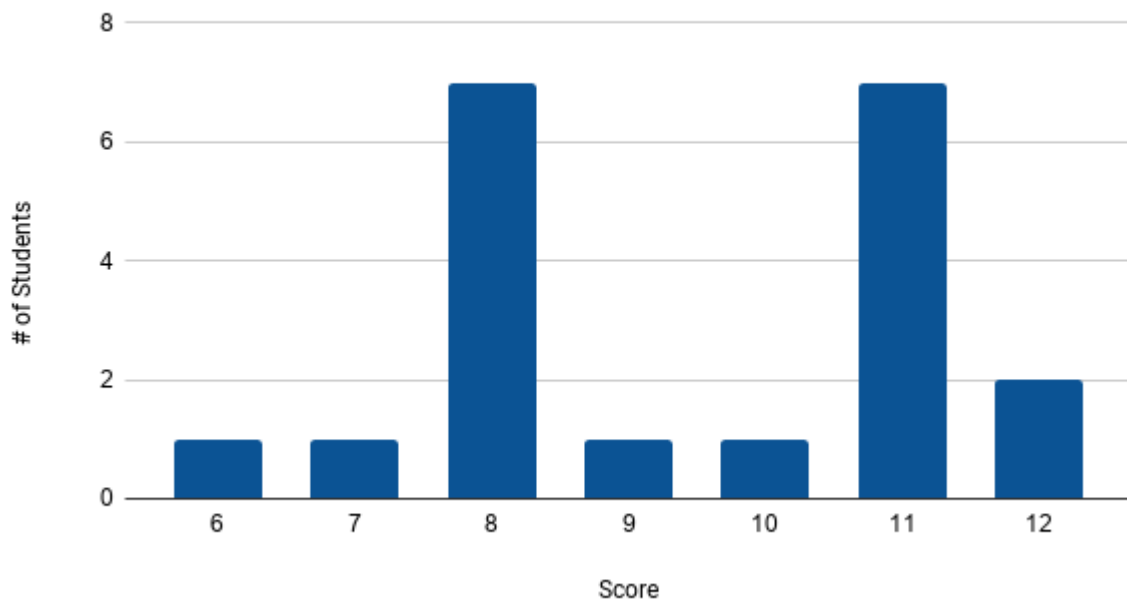
The outcomes were assessed using student Map Portfolios from the Geo 270, Creating a Map Portfolio class. This is a required course in the GIS Certificate and taken in the last term of the program. Only students in the GIS Certificate program enroll in this course. The Map Portfolios include at least 4 examples of map/GIS projects completed during their time in the program. Faculty used these map project examples to assess the four GIS Program Outcomes using a standardized rubric (attached to this report along with the Portfolio requirements).

Our benchmark for successful attainment of the program outcomes is a total score of 8 out of a possible 12 points. Each outcome was scored on a 0-3 scale, and a score of 2 represents that the students meet the requirements for the outcome (a score of 3 represents that the student exceeds the requirements). Therefore, if a student can score at least a 2 on each of the four outcomes, it represents that they have met our GIS Program Outcomes.

5. Please provide data collected in the assessment of this outcome (including score distribution and percentage meeting benchmark). We understand that some SACs will need to present work that is not redacted when reporting to TSA. For this report, please do not include student G#,s, but do assign an arbitrary identifier, especially if you wish to reference individual scores in your discussion. Include your principal data in the box below. Attach supplemental information or appendices when this form is turned in.

We assessed a total of 20 students' Map Portfolios from the Winter & Spring 2020 terms. 18 Students meet our benchmark of 8 out of 12 total points. The average score was 9.375. The chart below shows the distribution of scores.

Map Portfolio Score Distribution



6. Please discuss your overall findings regarding student learning. (Were there any surprises? Do data points make sense? How much confidence does the SAC have on these results? How does this information relate to student learning?)

We found that almost all of our students (and soon-to-be graduates) are successfully achieving all four of our program outcomes. We would hope that 100% of our students would successfully achieve the outcomes. We are surprised to see that 2 students (who did complete the GIS Certificate in Spring 2020) have not met the GIS Program Outcomes. We see this as an area in which we need to improve – to make sure that no student completes the program without meeting our program outcomes.

To assess the student Map Portfolios, Christina Friedle assessed all 20 using the rubric and those scores were averaged with the scores provided by the two Instructors of the Geo 270 course for the Winter & Spring classes. We all scored the Portfolios independently of one another and were happy to see that the scores were only different by one point for 3 students and a difference of 2 points for one student. This makes us highly confident in the results.

7. Please reflect on the entire project and share how your CTE SAC will use the results to improve student mastery of this outcome. Are there changes that need to be made? How will the SAC use the results to reassess this outcome in the future?

Of the four GIS Program Outcomes, students, on average, scored lowest on Program Outcome #2 (Analyze critically geographic problems & questions). There are a few reasons why we think this is the case – one being that not all students included the necessary information on their Portfolio to assess this properly. The instructors on the course need to emphasize the importance of explicitly including information on GIS project methods and geographic question, in the Portfolios.

The other possible reason is that we do not emphasize this particular aspect of the GIS project process enough in our classes. Some initial thoughts on this focus on some shifts we made in our GIS Analysis class that (unintentionally) took away from workflow diagrams and processes. We are going to look at our labs this summer to reinstate this emphasis and ensure that we discuss it in more detail when students are developing projects for their classes.

We will reflect on this as a SAC and determine other ways in which this can reinforce this in our classes. We will also reflect on how to better support students that show warning signs of not meeting program outcomes throughout the program.

If this is a Reassessment (that is, the outcome has been assessed before), please answer question 8; otherwise, write N/A and continue with question 9.

8. Were any modifications to instruction implemented between the prior assessment and this one? How did the assessment methods and results compare with the prior assessment?

To help us understand your SAC's overall processes, please complete these additional questions.

9. Was the SAC able to include Part-Time (PT) and Full-Time (FT) faculty for this assessment? If PT faculty did not participate, please explain any barriers that might account for this fact.

Both PT & FT Faculty were involved in this assessment project. Full-time Faculty member designed the Map Portfolio requirements, created the assessment tools, and assessed each of the projects using standardized rubric. Part-time Faculty members taught the Map Portfolio class sections.

10. Has this information been shared with all members of your SAC?

We will share the findings of this report with the SAC during the September SAC meeting.

11. Are there any areas that you might want help with from your CTE coach? Please let us know.

None that we can think of right now, although I appreciate that Magda is always available when we do need help.

12. If the project/assignment was assessed by more than one faculty member, how did the SAC ensure that all faculty or scorers were scoring in a consistent manner, also known as norming?

We did not formally engage in a norming session this Spring as planned. The plan was to have the three faculty involved in the assessment to sit down together and go through a few Portfolios together. The process would include individually scoring the Portfolio, sharing those scores when finished, and then going through a discussion to understand the reasoning behind the scores. This process would lead to some consensus on scoring that we could then use to score the remaining Portfolios.

Despite not having a norming session, we were delighted to find that our independent scores were not significantly different in any one case.

The plan will be to use a more formal norming process when we reassess this next year.

13. Is there anything else you would like to share with us? Please let us know.

The Map Portfolio guidelines and scoring rubric are included in this document (following the report). Thank you!

Thank you for completing this report!

We hope this has been a useful project to help your CTE SAC assist your students!

GEO 270 | CREATING A MAP PORTFOLIO

Course Objectives/Goals

- Create a Professional Geospatial focused Resume
- Create a LinkedIn Profile
- Create a Map Portfolio that represents the full range of projects and experience gained throughout the GIS Certificate program
- Reflect upon your learning experiences

COURSE ASSIGNMENTS

1 | Create a GIS/career focused resume

- First draft is reviewed by Instructor
- Edits from the Instructor are incorporated into a second draft
- The resume must be available in a digital format. There are a few options for what this will be:
 - PDF stored on a cloud service and linked to via LinkedIn
 - Digital resume on Indeed.com (preferred)

2 | Create a LinkedIn Profile

- Up-to-date profile based on your experience and education
- Set up for continual updating beyond course
- Include narrative
- Include url link to their portfolio website

3 | Create a Portfolio Website

- Resume
- Link to LinkedIn page
- 4 maps or examples of work created in GIS program, Internships, or other projects completed during the GIS Certificate program
 - At least one map/project that is unique to them and not a lab that all students complete
 - At least one map/project that demonstrates your Cartographic design skills/ability
 - At least one map/project that demonstrates your ability to critically address a spatial problem/question (analysis)
 - A map of your choice that demonstrates a geospatial application or tool (i.e. ENVI, UAS, Story Map, Web map, etc.)
- Each Map/Work Sample should include:
 - Statement of Purpose
 - Intended Audience
 - Geographic Question (analysis / spatial problem) or Design Goal (Cartographic)

- Data Sources
- Brief explanation of process/methods, including software used

4 | Write a Reflection Essay

- First draft is submitted to Instructor and revisions are made for a second/final draft
- Describe your most challenging project. How did you work through those challenges?
- What do you consider your most innovative workflow/method, or novel use of geospatial tools?
- What do you consider the most important thing that you learned throughout your GIS Certificate experience?

PROGRAM OUTCOMES	ACTIVITIES
Communicate geographic information verbally & graphically to a variety of audiences using geographic tools & technologies	<ul style="list-style-type: none"> → Apply cartographic principles such as visual hierarchy, balance, color choices, symbols, and labels to map design → Communicate visual information clearly → Include appropriate map elements in map design
Analyze critically geographic problems & questions	<ul style="list-style-type: none"> → Articulate a Geographic question → Use valid GIS principles and tools to answer geographic questions
Collect, create, analyze & document geographic information for various applications & disciplines	<ul style="list-style-type: none"> → Document GIS methods (work flows or written explanations) and data sources → Data sources reflect a compilation from a wide variety of valid and reliable sources → Uses GIS for a variety of applications (whether that be software applications or disciplines)
Use Geographic concepts & GIS technologies to input, store, query, and retrieve spatial & attribute data	<ul style="list-style-type: none"> → Apply Geographic concepts (location, place, scale, patterns, space) to spatial analysis → Use a variety of geospatial technologies to answer geographic questions

PROGRAM OUTCOMES	Does not meet expectations (0)	Partially meets expectations (1)	Meets expectations (2)	Exceeds expectations (3)
1. Communicate geographic information verbally & graphically to a variety of audiences using geographic tools & technologies	Map(s) construction is attempted, but the message is unclear, the design is lacking necessary elements and unification, and the audience is not considered.	All of the elements of the map(s) are present, but have not been refined, unified, or made specific to map purpose, making the map difficult to read and understand.	There is evidence to support an effort to display data clearly and in an understandable manner. Some small details are lacking.	Map(s) contains all data in clean, easy to read format. Clear attention to details of making a professional map given the map purpose and audience
2. Analyze critically geographic problems & questions	Map(s) shows no geographic question, and little or no evidence of geographic analysis or addressing geographic questions.	The map(s) has a question specified, but the methods or processes are not appropriate to answering the question.	The map adequately states a geographic question, and documents a sufficient method or process to analyze it	The portfolio provides a clear geographic question, and documents an appropriate or creative method or process to analyze it
3. Collect, create, analyze & document geographic information for various applications & disciplines	Little or no evidence of diverse data compilation or creation. No variety mapping projects completed in the program	Inadequate evidence of diverse data compilation or creation. No variety mapping projects completed in the program	Some variety of data source compilation and range of mapping projects completed in the program	Effectively uses a variety of data sources and demonstrates a diverse range of mapping projects completed in the program
4. Use Geographic concepts & GIS technologies to input, store, query, and retrieve spatial & attribute data	Shows little to no evidence of applying geographic concepts to projects. Uses a limited number of technologies or tools to address Geographic questions	Inadequately or incorrectly applies geographic concepts to projects. Inadequately or incorrectly uses technologies or tools to address Geographic questions	Sometimes applies geographic concepts to projects. Sometimes uses appropriate technologies or tools to address Geographic questions	Effectively applies geographic concepts to projects. Uses a variety of technologies or tools to address Geographic questions