

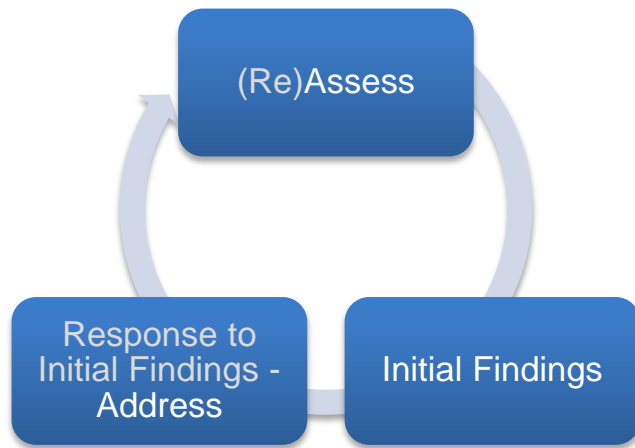
Subject Area Committee Name: CMET

Focal Outcome Being Reassessed: Communication skills

Contact Person:

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Use this form if your assessment project is a follow-up reassessment of a previously completed initial assessment. The basic model we use for core outcome assessment at PCC is an “assess – address – reassess” model.



The primary purpose for yearly assessment is to improve student learning. We do this by seeking out areas of concern, making changes, reassessing to see if the changes helped.

- Refer to the help document for guidance in filling out this report. If this document does not address your question/concern, contact [Wayne Hooke](#) to arrange for coaching assistance.
- Please attach all rubrics/assignments/etc. to your report submissions.
- **Subject Line of Email:** Reassessment Report Form (or RRF) for <your SAC name> (Example: RRF for NRS)
- **File name:** SACInitials_RRF_2016 (Example: NRS_RRF_2016)
- SACs are encouraged to share this report with their LAC coach for feedback before submitting.
- Make all submissions to learningassessment@pcc.edu.

Due Dates:

- **Planning Sections of LAC Assessment or Reassessment Reports: November 28th, 2016**
- **Completed LAC Assessment or Reassessment Reports: June 16th, 2017**

Please Verify This Before Beginning this Report:

This project is in the second stage of the assess/reassess process (if this is an initial assessment, use the LAC Assessment Report Form CTE. Available [here.](#))

Initial Assessment Project Summary (previously completed assessment project)

*Briefly summarize the main findings of your **initial** assessment. Include either 1) the frequencies (counts) of students who attained your benchmarks and those who did not, or 2) the percentage of students who attained your benchmark(s) and the size of the sample you measured:*

4 out of 5 groups (4 students per each group) met the performance benchmark of at least a 3.0, considered to be Accomplished in our Presentation Grading Rubric (see attached for both Assessment Data and Presentation Grading Rubric). Therefore, 16 out of the 20 students assessed met the Performance Benchmark for Communication.

Briefly summarize the changes to instruction, assignments, texts, lectures, etc. that you have made to address your initial findings:

CMET students will be coached on making visual communications more clear and concise. A sample exemplary technical presentation and a checklist of what constitutes a good slide (sense of scale, size of text, color combinations, contract, etc) will be

created and shared as part of the CMET 223 Project Management course.

If you initially assessed students in courses, which courses did you assess:

CMET 223 Project Management

If you made changes to your assessment tools or processes for this reassessment, briefly describe those changes here:

The CMET SAC will be using the matrix for assessment that we used in 2015-2016. In addition, the CMET SAC will be creating another matrix that has more detailed criteria that will be a boolean (yes or no) system, as opposed to a ranking system (1, 2, 3 or 4). The intent is for less subjective analysis and more inter-rater reliability.

1. Outcome Chosen for Focal Analysis

1A. How does your field interpret the outcome you are reassessing?

The CMET Industry Advisory Committee has repeatedly stressed the importance of written and oral communication skills for Civil and Mechanical Engineering Technicians.

1B. If the assessment project relates to any of the following, check all that apply:

- Degree/Certificate Outcome – if yes, include here: Communication skills
- PCC Core Outcome – if yes, which one: Communication
- Course Outcome – if yes, which one: Technical communication (CMET 223 Project Management)

2. Project Description

2A. Assessment Context

Check all the applicable items:

- Course-based assessment.**
Course names and number(s): CMET 223 Project Management

Type of assessment (e.g., essay, exam, speech, project, etc.): Final presentation of capstone project

Are there course outcomes that align with this aspect of the core outcome being investigated? Yes No

If yes, include the course outcome(s) from the relevant CCOG(s): Technical communication from CMET 223 as well as other CMET CCOGs

Common/embedded assignment in all relevant course sections. An embedded assignment is one that is already included as an element in the course as usually taught. Please attach the activity in an appendix. If the activity cannot be shared, indicate the type of assignment (e.g., essay, exam, speech, project, etc.): **Project presentation**

Common – but not embedded - assignment used in all relevant course sections. Please attach the activity in an appendix. If the activity cannot be shared, indicate the type of assignment (e.g., essay, exam, speech, project, etc.):

Practicum/Clinical work. Please attach the activity/checklist/etc. in an appendix. If this cannot be shared, indicate the type of assessment (e.g., supervisor checklist, interview, essay, exam, speech, project, etc.):

External certification exam. Please attach sample questions for the relevant portions of the exam in an appendix (provided that publically revealing this information will not compromise test security). Also, briefly describe how the results of this exam are broken down in a way that leads to nuanced information about the aspect of the core outcome that is being investigated.

SAC-created, non-course assessment. Please attach the assessment in an appendix. If the assessment cannot be shared, indicate the type of assignment (e.g., essay, exam, speech, project, etc.):

Portfolio. Please attach sample instructions/activities/etc. for the relevant portions of the portfolio submission in an appendix. Briefly describe how the results of this assessment are broken down in a way that leads to nuanced information about the aspect of the core outcome that is being investigated:

TSA. Please attach the relevant portions of the assessment in an appendix. If the assessment cannot be shared, indicate the type of assignment (e.g., essay, exam, speech, project, etc.):

Survey

Interview

Other. Please attach the activity/assessment in an appendix. If the activity cannot be shared, please briefly describe:

In the event publicly sharing your assessment documents will compromise future assessments or uses of the assignment, do not attach the actual assignment/document. Instead, please give as much detail about the activity as possible in an appendix.

2B. How will you score/measure/quantify student performance?

- Rubric** (used when student performance is on a continuum - if available, attach as an appendix – if in development, attach to the completed report that is submitted in June)
- Checklist** (used when presence/absence rather than quality is being evaluated - if available, attach as an appendix – if in development, attach to the completed report that is submitted in June)
- Trend Analysis** (often used to understand the ways in which students are, and are not, meeting expectations; trend analysis can complement rubrics and checklist)
- Objective Scoring** (e.g., Scantron-scored examinations)
- Other** – briefly describe:

2C. Type of assessment (select one per column)

- | | |
|---|--|
| <input checked="" type="checkbox"/> Quantitative | <input checked="" type="checkbox"/> Direct Assessment |
| <input type="checkbox"/> Qualitative | <input type="checkbox"/> Indirect Assessment |

If you selected 'Indirect Assessment', please share your rationale:

Qualitative Measures: projects that analyze in-depth, non-numerical data via observer impression rather than via quantitative analysis. Generally, qualitative measures are used in exploratory, pilot projects rather than in true assessments of student attainment. Note that the **use of a numerical rubric is considered quantitative analysis**, even if the artifacts under consideration are not based on quantitative evaluations (e.g. an essay scored by a rubric counts as quantitative in the context of assessment).

Indirect assessments (e.g., surveys, focus groups, etc.) do not use measures of direct student work output. These types of assessments are also not able to truly document student attainment.

2D. Check any of the following that were used by your SAC to create or select the assessment/scoring criteria/instruments used in this project:

- Committee or subcommittee of the SAC collaborated in its creation
- Standardized assessment
- Collaboration with external stakeholders (e.g., advisory board, transfer institution/program)
- Theoretical model (e.g., Bloom's Taxonomy)
- Aligned the assessment with standards from a professional body (for example, The American Psychological Association)

Undergraduate Guidelines, etc.)

- Aligned the benchmark with the Associate’s Degree-level expectations of the Degree Qualifications Profile
- Aligned the benchmark to within-discipline post-requisite course(s)
- Aligned the benchmark to out-of-discipline post-requisite course(s)
- Other (briefly explain: _____)

2E. In which quarter will student artifacts (samples of student work) be collected? If student artifacts will be collected in more than one term, check all that apply.

- Fall Winter Spring Other (e.g., if work is collected between terms)

2F. What student group do you want to generalize the results of your assessment to? For example, if you are assessing performance in a course, the student group you want to generalize to is ‘all students taking this course.’

All students taking this course.

2G. There is no single, recommended assessment strategy. Each SAC is tasked with choosing appropriate methods for their purposes. Which best describes the purpose of this project?

- To measure established outcomes and/or drive programmatic change**
- To participate in the Multi-State Collaborative for Learning Outcomes Assessment**
- Preliminary/Exploratory Investigation**

If you selected ‘Preliminary/Exploratory’, briefly describe your rationale for selecting your sampling method:

2H. Which will you measure?

- the population** (all relevant students – e.g., all students enrolled in all currently-offered sections of the course)
- a sample** (a subset of students)

If you are using a sample, select all of the following that describe your sample/sampling strategy (refer to the Help Guide for assistance):

- Random Sample** (student work selected completely randomly from all relevant students)

- Systematic Sample** (student work selected through an arbitrary pattern, e.g., 'start at student 7 on the roster and then select every 5th student following'; repeating this in all relevant course sections)
- Stratified Sample** (more complex, consult with an LAC coach if you need assistance)
- Cluster Sample** (students are selected randomly from meaningful, naturally-occurring groupings (e.g., SES, placement exam scores, etc.))
- Voluntary Response Sample** (students submit their work/responses through voluntary submission – e.g., via a survey)
- Opportunity/Convenience Sample** (only some of the relevant instructors are participating)

The last three options in bolded red have a high risk of introducing bias. If your SAC is using one or more of these sample/sampling strategies, please share your rationale:

2J. Briefly describe the procedure you will use to select your sample (including a description of the procedures used to ensure student and instructor anonymity).

2K. Follow this link to determine how many artifacts (samples of student work) you should include in your assessment: <http://www.raosoft.com/samplesize.html> (see screen shot below).

Start with the number of students you estimate will be enrolled in the course(s) from which you will draw the sample – that is your “population.” Enter the other numbers as indicated in the screenshot. The sample size calculator will tell you how many artifacts you need to collect. Enter that number below:

Sample size calculator

What margin of error can you accept?
5% is a common choice

What confidence level do you need?
Typical choices are 90%, 95%, or 99%

What is the population size?
If you don't know, use 20000

What is the response distribution?
Leave this as 50%

Your recommended sample size is

10 %

90 %

105

50 %

42

The margin of error is the amount of error that you can tolerate. If 90% of respondents answer yes, while 10% answer no, you may be able to tolerate a larger amount of error than if the respondents are split 50-50 or 45-55. Lower margin of error requires a larger sample size. **Use 10% and 90% in these boxes.**

The confidence level is the amount of uncertainty you can tolerate. Suppose that you have 20 yes-no questions in your survey. With a confidence level of 95%, you would expect that for one of the questions (1 in 20), the percentage of people who answer yes would be more than the margin of error away from the true answer. The true answer is the percentage you would get if you exhaustively interviewed everyone. Higher confidence level requires a larger sample size. **Enter the total number of students currently enrolled in all sections of the courses you are assessing here.**

How many people are there to choose your random sample from? The sample size does not have to be a population larger than 20,000.

For each question, what do you expect the results will be? If the sample is skewed highly one way or the other, the population probably is, too. If you don't know, use 50%, which gives the largest sample size. See below under **More information** if this is confusing. **Measure this many students.**

This is the minimum recommended size of your survey. If you create a sample of this many people and get responses from everyone, you're more likely to get a correct answer than you would from a large sample where only a small percentage of the sample responds to your survey.

3. Project Mechanics

3A. Does your project utilize a rubric for scoring? Yes No

If 'No', proceed to section B. If 'Yes', complete the following:

Which method of ensuring consistent scoring (inter-rater reliability) will your SAC use for this project?

Agreement – the percentage of raters giving each artifact the same/similar score in a norming session; ideally, that will be 75% agreement or greater.

If you are using agreement, describe your plan for plan for conducting the “norming” or “calibrating” session:

Consensus - all raters score all artifacts and reach agreement on each score

Consistency* – raters' scores are correlated: this captures relative standing of the performance ratings - but not precise

agreement. Briefly describe your plan:

Notes: the agreement method is the most frequently used for assessment, but the **calculation of inter-rater reliability is also among the more challenging issues** within assessment as a whole. If your SAC is unfamiliar with norming procedures, contact your assessment coach, or if you don't know who your coach is, contact LAC Vice Chair [Chris Brooks](#) to arrange for coaching help for your SAC's norming session.

The consistency method is not generally recommended; see the help guide for details.

3B. Have performance benchmarks been specified?

The fundamental measure in educational assessment is the number of students who complete the work at the expected/required level. We are calling this SAC-determined performance expectation the 'benchmark.'

- Yes**
 No

If yes, briefly describe your performance benchmarks, being as specific as possible (if needed, attach as an appendix):

The performance benchmark of at least a 3.0, considered to be Accomplished in our Presentation Grading Rubric (see attached for both Assessment Data and Presentation Grading Rubric). We have not set a performance benchmark for the new rubric that we also plan to use.

If no, what is the purpose of this assessment? (For example, this assessment will provide information that will lead to developing benchmarks in the future; or, this assessment will lead to areas for more detailed study, etc.)

3C. The purpose of this assessment is to have SAC-wide evaluation of student work, not to evaluate a particular instructor or student. Before evaluation, remove student-identifying information (and, when possible remove instructor-identifying information). If the SAC wishes to return instructor-specific results, see the Help Guide for suggestions on how to code and collate. **Please share your process for ensuring that all identifying information has been removed.**

As we will be assessing written and verbal communication skills (written would include calculations, hand sketches, CAD drawings, other visual aids), we will not be able to remove identifying student information.

3D. Will you be coding your data/artifacts in order to compare student sub-groups? Yes No

If yes, select one of the boxes below:

- student's total earned hours previous coursework completed ethnicity other

Briefly describe your coding plan and rationale (and if you selected 'other', identify the sub-groups you will be coding for):

3E. Ideally, student work is **evaluated** by both full-time and adjunct faculty, even if students being assessed are taught by only full-time and/or adjunct faculty. Further, more than one rater is needed to ensure inter-rater reliability. If you feel only one rater is feasible for your SAC, please explain why:

Who will be assessing student work for this project? Check all that apply.

- PCC Adjunct Faculty within the program/discipline
- PCC FT Faculty within the program/discipline
- PCC Faculty outside the program/discipline
- Program Advisory Board Members
- Non-PCC Faculty
- External Supervisors
- Other:

End of Planning Section – Complete the remainder of this report after your assessment project is complete.

Beginning of End-of-Year Reporting Section – complete the following sections after your reassessment project is complete.

4. *Changes to the Assessment Plan*

Have there been changes to your project since you submitted the planning section of this report? **Yes** **No**

If so, summarize those changes below:

5. *Narrative*

Broadly, what did your SAC learn this year from the assessment of the selected core outcome?

Upon reviewing the data (CMET rubric data for 2016-17.xls), the mean for Visual Aids was lower than the mean for the other 5 presentation categories. The CMET SAC learned that this continues to be an issue, even though efforts have been made to implement corrections to this aspect of presentations in the past school year. For example, the discussion of minimal slide verbage in TED talks in CMET 221 Environmental Quality and slide templates delivered to the students in CMET 235 Machine Design were a means to this end of higher-quality visual aids. It was determined upon review of the Visual Aids data that further steps, including more focus on Visual Aids during the first-year of the CMET program, will be taken.

The CMET SAC also discussed that the CMET 223 Project Management course should be either moved up a term in the 6-term CMET degree or another Project Management/Capstone project course should be added to the CMET degree. The faculty teaching this course (CMET 223 Project Management) should be involved in this process. (In 2016-17, CMET 223 Project Management was taught by an Adjunct Faculty member.) This rearrangement has been discussed in the past, but was reinforced by the data gathered for the LAC Focal Outcome Reassessment Report.

6. Results of the Analysis of Assessment Project Data

6A. Quantitative Summary of Sample/Population

How many students were enrolled in all sections of the course(s) you assessed this year? 25
 If you did not assess in a course, report the number of students that are in the group you intend to generalize your results to.

How many students did you actually assess in this project? 25

Did you use a recommended sample size (see the Sample Size Calculator linked to in section 2J)?

Yes No

If you did not use a recommended sample size in your assessment, briefly explain why:

We used the entire student population in this course.

6B. Did your project utilize a rubric for scoring? Yes No

If 'No', proceed to section C. If 'Yes', complete the following:

How was inter-rater reliability assured? (Contact your SAC's LAC Coach if you would like help with this.)

- Agreement** – the percentage of raters giving each artifact the same/similar score in a norming session
- Consensus** - all raters score all artifacts and reach agreement on each score
- Consistency** – raters' scores are correlated: this captures relative standing of the performance ratings - but not precise agreement
- Inter-rater reliability was not assured.**

If you utilized agreement or consistency measures of inter-rater reliability, report the level here:

6C. Brief Summary of Benchmark Achievement (frequencies and/or averages)

In most cases, report the numbers of students who attain your benchmark level and the numbers who do not. **Do not average these numbers or combine dissimilar categories (e.g., do not combine ratings for communication and critical thinking together).** If your project measures how many students attain the overall benchmark level of performance, report the summary numbers below (choose one):

1. *If you used frequencies of benchmark achievement, report those here. For example, “46 students attained or exceeded the benchmark level in written communication and 15 did not.” If necessary, provide detailed results in an appendix.*

4 out of 6 groups (4 or 5 students per each group) met the performance benchmark of at least a 3.0, considered to be Accomplished in our Presentation Grading Rubric (see attached for both Assessment Data and Presentation Grading Rubric). 17 out of the 25 students assessed met the Performance Benchmark for Communication.

2. *If you used percentages of the total to identify the degree of benchmark attainment in this project, report those here. For example, “75% of 61 students attained or exceeded the benchmark level over-all in written communication.”*

3. *Compare your students’ attainment of your expectations/benchmarks in this reassessment with their attainment in the initial assessment. Briefly summarize your conclusions.*

In the initial assessment of 2015-16 , 16 students out of 20 met the performance benchmark of at least a 3.0. Organization improved (2.8 vs 2.4) which the CMET SAC had seen as a opportunity for improvement in 2015-16, but the Visual Aids score decreased from 2.6 to 2.5 and is still viewed by the CMET SAC as the greatest opportunity for improvement.

6D. *If possible, attach a more detailed description or analysis of your results (e.g., rubric scores, trend analyses, etc.) as an appendix to this document. Appendix attached?* **Yes** **No**

6E. *Do the results of this project suggest that additional academic / training changes might be beneficial to your students (changes in curriculum, content, materials, instruction, pedagogy etc.)?* **Yes** **No**

If you answered ‘Yes,’ briefly describe the changes to improve student learning below. If you answered ‘No’, detail why no changes are called for.

As discussed in Section 5. Narrative, the CMET SAC will alter how and how frequently Visual Aids in presentations will be addressed and either moving CMET 223 Project Management forward in the CMET degree (from the 6th quarter to the 5th quarter, for example) or adding another

Capstone Project type course to the degree.

If you are planning changes, when will these changes be fully implemented?

The Visual Aid change will occur in the 2017-2018 school year. The Project Management/Capstone Project change will be worked on during the 2017-2018 school year and, assuming passage through the Degrees and Certificate and Curriculum Committees, will be fully implemented in the 2018-2019 school year.

6F. *Has all identifying information been removed from your documents? (Information includes student/instructor/supervisor names/identification numbers, names of external placement sites, etc.)* Yes No

7. SAC Response to the Assessment Project Results

7A. Assessment Tools & Processes: Indicate how well each of the following worked for your assessment:

Tools (rubrics, test items, questionnaires, etc.):

very well some small problems/limitations to fix notable problems/limitations to fix completely inadequate/failure

Please comment briefly on any changes to assessment tools that would lead to more meaningful results if this assessment were to be repeated (or adapted to another outcome).

More CMET SAC faculty involvement with the assessment tools, especially the faculty member teaching the CMET 223 Project Management course. It has also been discussed that the CMET SAC will create a new assessment matrix CMET SAC that has more detailed criteria with a boolean (yes or no) system, as opposed to a ranking system (1, 2, 3 or 4). The intent is for less subjective analysis and more inter-rater reliability.

Processes (faculty involvement, sampling, norming, inter-rater reliability, etc.):

very well some small problems/limitations to fix notable problems/limitations to fix tools completely inadequate/failure

Please comment briefly on any changes to assessment process that would lead to more meaningful results if this assessment were to be repeated (or adapted to another outcome).

The Consensus approach of inter-rater reliability has been found to be successful in producing meaningful dialogue among the CMET faculty.

8. Follow-Up Plan

8A. How will the changes detailed in this report be shared with all FT/PT faculty in your SAC? *(select all that apply)*

- | | | |
|--|---|-----------------------------------|
| <input checked="" type="checkbox"/> email | <input type="checkbox"/> phone call | <input type="checkbox"/> workshop |
| <input type="checkbox"/> campus mail | <input type="checkbox"/> face-to-face meeting | <input type="checkbox"/> other |
| <input type="checkbox"/> no changes to share | | |

If 'other,' please describe briefly below.

8B. Is further collaboration/training required to properly implement the identified changes? Yes No

If 'Yes,' briefly detail your plan/schedule below.

Further collaboration of the CMET SAC is required to implement changes to the CMET degree. Weekly meetings in the Fall 2017 quarter have been scheduled for this intent.

8C. Sometimes reassessment projects call for additional reassessments. These can be formal or informal. How will you assess the effectiveness of the changes you plan to make?

- | | |
|---|--|
| <input type="checkbox"/> follow-up project in next year's annual report | <input checked="" type="checkbox"/> on-going informal assessment |
| <input type="checkbox"/> in a future assessment project | <input type="checkbox"/> other |

If 'other,' please describe briefly below.

8D. SACs are learning how to create and manage meaningful assessments in their courses. This development may require SAC discussion to support the assessment process (e.g., awareness, buy-in,

communication, etc.). Please briefly describe any successful developments within your SAC that support the quality assessment of student learning. If challenges remain, these can also be shared.

The CMET SAC has found the process of evaluating and assessing student learning during Finals Week to be a valuable ritual. It requires gathering to observe and assess the CMET students in their last week of the program which provides a sense of closure to the students, especially, as they see the majority of the faculty that have been an integral part of their CMET education. After the project presentations, the CMET SAC shares their data (coming to a Consensus) and looks for opportunities for improvement in the program. Results are shared to all faculty via email. This annual process supports continuous improvement in the CMET degree.