

Program: \_\_\_\_\_ Construction Management

Date: \_\_\_\_\_ May 25, 2015\_\_

Completed by: \_\_\_\_\_ Michael Mincic \_\_\_\_\_

Assessment contributors (other faculty involved in this program's assessment): \_\_\_\_\_ Daniel Trujillo and Industry Partners \_\_\_\_\_

Please complete this form for each undergraduate, minor, certificate, and graduate program (e.g., B.A., B.S., M.S.) in your department. Please copy any addenda (e.g., rubrics) and paste them in this document, and submit it to the dean of your college/school as per the deadline established. The dean will forward it to me as an email attachment before June 2, 2014. You'll also find the form at the assessment website at <http://www.colostate-pueblo.edu/Assessment/ResultsAndReports/Pages/default.aspx>.

### I. Program student learning outcomes (SLOs) assessed in this cycle, processes, results, and recommendations.

A. Which of the program SLOs were assessed during this cycle? <b>Please include the outcome(s) verbatim from the assessment plan.</b>	B. When was this SLO last assessed?	C. What method was used for assessing the SLO? <b>Please include a copy of any rubrics used in the assessment process.</b>	D. Who was assessed? Please fully describe the student group.	E. What is the expected achievement level and how many students should be at it?	F. What were the results of the assessment?	G. What were the department's conclusions about student performance?	H. What changes/improvements to the <u>program</u> are planned based on this assessment?
#2. Select and apply the knowledge of mathematics, science and technology to construction problems.	This is the first time	Three category rubric measuring: -Knowledge -Performance -Communication	The sample of three projects from the CM 475- Senior Projects course	Level 2 or 3 with 70% of the students achieving one of the levels	100% were within Level 2 or 3.	The evaluator and the industry partners all noted that while the 2 of the 3 teams used standardized tools to determine the costs necessary to complete the project based upon	It is obvious that while the students exercised the correct processes to develop the deliverables to the client, the reliability of the results was questionable. The project planning business is very risky and the final results lacked enough

						work related activities and labor production however the confidence of the results was suspect due to minimal comparison to standard costs.	background data to provide confidence to the final results. The CM department will consider implementing more checks and balances processes within the courses leading to the final project. Enhancing the comparison with national and regional pricing will be considered.
#6-Demonstrate an understanding of professional and ethical responsibilities.	This is the first time to assess this SLO.	Three category rubric measuring: -Knowledge -Performance -Communication	The entire CM 461- Construcion Law course	Level 2 or 3 with 70% of the students achiveiving one of the levels	84% were within Level 2 or 3	The evaluator reviewed, papers, presentations and overall student performance in the course to determine student achievement.	During the 2014-15 academic year the CM 461 course was taught by a visiting professor. The department has requested a tenured or tenure track professor who will conduct this class which will strengthen the integrity and reinforcement in the course for future years.

Comments:

SLO #2- Results: (See Rubric)

- Knowledge Category- 43% of the class completed in the Level 3 (Superior) while 57% of the class completed in Level 2 (Basic),
- Performance Category- 29% of the class completed within the Level 3 (Superior) with the remaining 71% in Level 2 (Basic),
- Communication Category- 71% of the class completed within the Level 3 (Superior) with the remaining 29% in Level 2 (Basic).

The samples taken to evaluate this SLO were chosen to evaluate each of the senior project for the spring 2015 course. Seven students were allowed to choose 1 of three projects which are developed and defined by construction industry partners. Each student then is given the opportunity to work other students choosing the similar project to determine their project teams. Each team will interview and synthesize the project with the partner to determine the scope of the project and the necessary deliverables to complete the project by the semester end. Students work independently or as teams to accomplish the project requirements using the skills, tools and use of resources developed in required and elective coursework to get the student to this point. While the course instructor and the industry partners were pleased with the results of the student work it was obvious the the confidence of the results was suspicious. This was evident by one team being recognizably off the final costs to another team's oral presentation leaving many unanswered questions.

Professor Mincic felt the final report within the CM 475 course is used to evaluate numerous competencies and outcomes within the curricula therefore the extraction of specific data such as such as knowledge of math, science and technology may be challenging. However the projects and the final presentations made the assessment of data obvious. The student confidence level was questionable with their own results. While the data results were within the normal range the majority of the students weren't able to convince the industry partner the data was valid and why.

#### SLO #6

- Knowledge Category- 16% of the class completed in the Level 3 (Superior) while 58% of the class completed in Level 2 (Basic), 16% of the class completed in the Level 1 (Unacceptable)
- Performance Category- 16% of the class completed within the Level 3 (Superior) with the remaining 58% in Level 2 (Basic), 16% of the class performed at Level 1 (Unacceptable)
- Communication Category- 84% of the class completed within the Level 3 (Superior) with the remaining 16% in Level 2 (Basic).

To evaluate Student Learning outcomes, the final grade, presentation grades, specific work evaluating contracts were reviewed using student grade statistics for each category and correlating those to the knowledge category, performance category and communications category. twelve students participated in the class with 2 performing exceptionally and 2 at an unacceptable level in the knowledge and performance categories. All students demonstrated superior to basic skills in the communication category. The class utilized case studies, presentations, weekly quizzes that aligned with reading and a midterm and final exam. Students worked both individually and in groups. Using properly prepared standard formats as specified the students demonstrated minimal grammatical and spelling errors. In the knowledge component the majority of students demonstrate basic professional and ethical responsibility skills by accomplishing the given project with minimal supervision. Independent results demonstrated in the final projects a basic to advanced understanding of the topics addressed.

**B. Follow-up (closing the loop) on results and activities from previous assessment cycles. In this section, please describe actions taken during this cycle that were based on, or implemented to address, the results of assessment from previous cycles.**

A. What SLO(s) did you address? Please include the outcome(s) verbatim from the assessment plan.	B. When was this SLO last assessed?	C. What were the recommendations for change from the previous assessment?	D. Were the recommendations for change acted upon? If not, why?	E. What were the results of the changes? If the changes were not effective, what are the next steps or the new recommendations?
#5 Communicate effectively regarding subjects related to construction activities.	Academic year 2013-2014	Increase the level of oral communication activities throughout the construction related curriculum	The recommendations were acted upon however the 2014-2015 academic year had an exceptionally high number of adjunct and visiting professors. While the professors delivered outstanding instruction within classroom the opportunity to build in this area was restricted.	The department chair strongly encouraged the dean to fill a visiting professor position with a tenured or tenure track professor. Also strengthen the number of full time professors within the CET/CM program to help solidify the instructional quality for future years.
#1 Apply knowledge, techniques, skills and tools of the construction industry in construction activities	Academic year 2013-2014	Integrate comprehensive evaluation of project schedules to include oral and written presentations.	Instructors made concienious efforts to integrate projects that lend them selves to evaluation of construction activities. Instructors also working on developing program level assessment rubrics to normalize comparison across courses.	The department chair strongly encouraged the dean to fill a visiting professor position with a tenured or tenure track professor. Also strengthen the number of full time professors within the CET/CM program to help solidify the instructional quality for future years.

Comments:

Since the CM program is new and the assessment plan defines Student Learning Outcomes #2 and #6 for the first time. Therefore no follow up data or results are available at the time of this report.

## Rubric: Construction Management Outcomes #2

**Outcome:** #2- Select and apply knowledge of mathematics, science and technology to construction problems.

**Evidence:** Review and Analysis of assigned Final Project in CM 475- Senior Project

**Standard:** We will be satisfied if 70% or more of the students achieve Level 2 or 3

Category			
	Level 3 (Superior)	Level 2 (Basic)	Level 1 (Unacceptable)
Knowledge:	Demonstrates an ability to apply superior knowledge of mathematics, science and technology traits. Through the preparation of a comprehensive report of the process and results of a semester long senior project. Also the ability to compare and contrast the results of the data to enhance quality of the results in the future Demonstrates ability to prepare a comprehensive report of the given project.	Demonstrates an ability to apply basic knowledge of mathematics, science and technology traits. Through the preparation of a comprehensive report of the process and results of a semester long senior project.. Also the ability to compare and contrast the results of the data to enhance quality of the results in the future Demonstrates ability to prepare a report of the given project.	Unable to demonstrate an ability to apply superior knowledge of mathematics, science and technology traits. Through the preparation of a comprehensive report of the process and results of a semester long senior project.. Also the ability to compare and contrast the results of the data to enhance quality of the results in the future Demonstrates ability to prepare an acceptable report of the given project.
Performance	Performing superior mathematics, science and technology skills by accomplishing the given project with minimal supervision and independent results demonstrated in a final project report and consultation of supervising authority. -Demonstrates a superior ability to compare and contrast the results of the data. -Demonstrates a superior ability to improve the results after analysis of data.	Performing basic mathematics, science and technology skills by accomplishing the given project with minimal supervision and independent results demonstrated in a final project report and consultation of supervising authority. -Demonstrates a basic ability to compare and contrast the results of the data. -Demonstrates a basic ability to improve the results after analysis of data.	Unable to perform basic mathematics, science and technology skills by accomplishing the given project with minimal supervision and independent results demonstrated in a final project report and consultation of supervising authority. -Unable to demonstrate a basic ability to compare and contrast the results of the data. -Unable to demonstrates a basic ability to improve the results after analysis of data.
Communication	-Demonstrates ability to prepare a superior comprehensive report of the specific senior project quality of a competent leader. Using properly prepared standard formats as specified with no grammatical or spelling errors.	Demonstrates ability to prepare a basic report of the specific senior project quality of a competent leader. Using properly prepared standard formats as specified with minimal grammatical or spelling errors.	Unable to prepare a basic report of the specific senior project quality of a competent leader. Using properly prepared standard formats as specified with no grammatical or spelling errors.

**Comments:**

SLO #2- Results:

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### Rubric: Construction Management Outcomes #6

**Outcome:** #6-Demonstrate an understanding of professional and ethical responsibilities.

**Evidence:** Review and Analysis of assigned material and or projects within CM 461- Construction Law

**Standard:** We will be satisfied if 70% or more of the students achieve Level 2 or 3

Category			
	Level 3 (Superior)	Level 2 (Basic)	Level 1 (Unacceptable)
Knowledge:	Demonstrates an ability to apply superior knowledge of professional and ethical responsibility traits. Through the preparation of a comprehensive report of the process and results of a semester long senior project. Also the ability to compare and contrast the results of the data to enhance quality of the results in the future Demonstrates ability to prepare a comprehensive report of the given project.	Demonstrates an ability to apply basic knowledge of professional and ethical responsibility traits. Through the preparation of a comprehensive report of the process and results of a semester long senior project.. Also the ability to compare and contrast the results of the data to enhance quality of the results in the future Demonstrates ability to prepare a report of the given project.	Unable to demonstrate an ability to apply superior knowledge of professional and ethical responsibility traits. Through the preparation of a comprehensive report of the process and results of a semester long senior project.. Also the ability to compare and contrast the results of the data to enhance quality of the results in the future Demonstrates ability to prepare an acceptable report of the given project.
Performance	Performing superior professional and ethical responsibility skills by accomplishing the given project with minimal supervision and independent results demonstrated in a final project report and consultation of supervising authority. -Demonstrates a superior ability to compare and contrast the results of the data. -Demonstrates a superior ability to improve the results after analysis of data.	Performing basic professional and ethical responsibility skills by accomplishing the given project with minimal supervision and independent results demonstrated in a final project report and consultation of supervising authority. -Demonstrates a basic ability to compare and contrast the results of the data. -Demonstrates a basic ability to improve the results after analysis of data.	Unable to perform basic professional and ethical responsibility skills by accomplishing the given project with minimal supervision and independent results demonstrated in a final project report and consultation of supervising authority. -Unable to demonstrate a basic ability to compare and contrast the results of the data. -Unable to demonstrates a basic ability to improve the results after analysis of data.
Communication	-Demonstrates ability to prepare a superior comprehensive report of the specific senior project quality of a competent leader. Using properly prepared standard formats as specified with no grammatical or spelling errors.	Demonstrates ability to prepare a basic report of the specific senior project quality of a competent leader. Using properly prepared standard formats as specified with minimal grammatical or spelling errors.	Unable to prepare a basic report of the specific senior project quality of a competent leader. Using properly prepared standard formats as specified with no grammatical or spelling errors.

**Comments:**