

**ASSESSMENT IMPLEMENTATION PLAN  
FOR THE CONSTRUCTION MANAGEMENT DEGREE  
PROGRAM**

## Scope

The program implementation plan is a report of the comprehensive assessment at the degree program level. This report explains the results of the evaluation of the degree program goals and learning outcomes.

## Assessment Report

This report describes the assessment results for 2015 Construction Management Program goals and ACCE's new students learning outcomes (SLOs). As the program was eligible to apply for reaccreditation in 2016, the department faculty started to implement the new outcomes based assessment plan.

As it is described in this plan the program goals have been assessed based on 3 year cycle which started in 2015 and the program learning outcomes which are the ACCE SLO's as well have been assessed based on 5 year cycle which started in 2015.

In the following sections the program goals and the learning outcomes assessment results which have been selected to be assessed in 2015 are presented with their analyses and conclusions. Since there was some challenges regarding the available time to transition from the old to the new standards and the time allocated to develop the self-study for reaccreditation process, no follow up on the results of the actions taken is available at this time.

## Assessment of Program Goals

The following two program goals; student activity and external support have been evaluated and the results explained below:

**Student Activity:** Involve students in industry-sponsored events to facilitate students' professional development prior to graduation.

- A. Execution;
  - Enhancing the student chapter Construction Management Student Association (CMSA) activities that would create networking opportunities and develop the professional and managerial soft skills in the construction industry
  - Participating in construction related student competitions
  - Enhancing the extra-curricular activities
- B. Resources Needed;
  - A faculty advisor to support the students chapter
  - The industry professional and financial support to provide these opportunities
  - An active student chapter organization
- C. Performance Criteria;
  - The ability to have at least one event each semester for students to support their professional development

- The appropriate number of students in teams to participate in competitions, the CMSA officers with the program faculty agreed that at least one student competition and one team to participate should be maintained every year.
- The availability of the appropriate funding capacity, the CMSA officers with the program faculty agreed that at least ten thousand dollars should be raised every year to maintain students activities and networking opportunities

D. Assessment Results

- Two main events have been created and developed by CMSA; The Golf Classic in the fall and Sporting Clay in the spring
- A team of three students participated in the Quiz Bowl regional competition and the team came in 2<sup>nd</sup> place among ten competing teams from different programs in the Midwest region.
- More than one team competed at the ASC region IV annual competition in the last three years as follows;
  - Total of 19 students participated in the ASC region IV competition in fall 2014
  - Total of 21 students participated in the ASC region IV competition in fall 2013
  - Total of 16 students participated in the ASC region IV competition in fall 2012 and one team came in 2<sup>nd</sup> place in residential competition.
- Total money raised by the industry for the CMSA activities in each event are listed below:

	Money Raised					
CMSA Event	12 <sup>th</sup> Golf Classic 2013	13 <sup>th</sup> Golf Classic 2014	14 <sup>th</sup> Golf Classic 2015	Sporting Clay 2013	1 <sup>st</sup> Sporting Clay 2014	2 <sup>nd</sup> Sporting Clay 2015
	\$7,842	\$10,615	\$18,490	-	\$14,373	\$15,440

E. Action Taken

- The program started to offer an elective competition class to improve the students' learning experience in competitions and teams' placement.
- Despite that the data shows successful results for the listed performance criteria which exceeded the planned criteria, more opportunities will be utilized to expand the students' participation in other student competitions and professional activities as more interest among student was observed.

**External Support:** Maintain a stable and effective Advisory Board to provide industry perspective and financial support to faculty and to grant students scholarships and job opportunities.

A. Execution;

- Hosting and promoting industry advisory board (IAB) meetings
- Collaborating with the IAB members in the different committees to provide the appropriate curriculum, program development, sponsorship, and financial support opportunities

B. Resources Needed;

- An adequate number of advisory board members
- Professional and Funding capacity by the IAB members

C. Performance Criteria;

- The ability to have more than one collaboration event with IAB members each academic year
- Total amount of financial support to faculty development activities
- Total number of awarded scholarships and the dollar amount of funding awarded

D. Assessment Results

- IAB consists of 46 members meets twice a year with the program faculty to discuss the faculty and student support, curriculum, and program development issues and activities.
- Total of \$1,300 assigned for each fulltime faculty to use for her/his development activities that includes travelling to conferences and taking any professional related training classes and workshops
- Total number/amount of awarded scholarships in the following years are;
  - 18 awards for \$ 31,000 in academic year 2015-2016
  - 13 awards for \$ 17,000 in academic year 2014-2015
  - 12 awards for \$ 12,000 in academic year 2013-2014
- Total gifts by industry to the CM Program including gift in kind and cash in the last years;
  - \$ 61,367 in FYI 2015
  - \$ 93,737 in FYI 2014

E. Action Taken

- In the last IAB meetings with faculty in fall 2014 and spring 2015 some curriculum changes have been suggested and accordingly the program updated the classes contents for the project management class and changed the emphasis of construction graphics class to be more on plan readings, replaced the advanced structures analysis class with new construction equipment class and offered new elective courses like BIM and Risk Management classes that would serve the build environment advancement.
- As the scholarships donated money has been increased in the last year the program faculty decided to improve the number of students' applications by

spending more time in class to announce and explain the different available scholarships.

The data analysis shows successful results for the listed performance criteria for both assessed program goals which exceeded the planned criteria, and the program was satisfied with the performance of faculty and students to achieve the program mission in this regard.

### Assessment of Student Learning Outcomes

The program decided to assess the twenty students learning outcomes which are the ACCE and CM Program outcomes as well in five year cycle, so four outcomes will be assessed each year based on the listed table in previous section of the assessment plan starting 2015.

As the program faculty decided in fall 2014 to drop the AC Exam as one of the indirect assessment type since it was not aligned with the new ACCE Outcomes Based Standards, the decision will be revisited again after incorporating the new outcomes in this exam. The graduating senior survey (exit interview) was employed in fall 2015 as indirect assessment to evaluate the student opinion regarding their confidence of their ability about the twenty student learning outcomes. Although the program has a cumulative data for this survey before it was updated from previous years, but it does not reflect the new outcomes standards and includes only qualitative data. The data has been analyzed informally to improve the program activities. The direct assessment of these SLO's was employed in specific classes and the results is tabulated and listed at the program website.

The program is into a process of updating the employer and alumni survey questionnaire to reflect the new standards and use the data in future analysis.

The data listed in the tables below is only for the four assessed outcomes in spring and fall 2015.

<b>Create written communications appropriate to the construction discipline SLO 1</b>				
Assessment Tools	Performance Indicator	Type of Assessment	Performance Criteria	Outcomes
Course Learning Outcomes (CLO's)	CM120 Construction Graphics Project (spring 15)	Direct	70% of students passing with 70% and above	85%
	CM 210 Construction Materials & Methods I Case Study scores (fall 15)	Direct		83%
Outcome Survey	Graduating Senior Survey	Indirect	70%	78%

### Summary

The outcome results show that the performance criteria were met or exceeded with all utilized assessment tools.

### Action Taken

No action item was considered at this time

### Conclusions

The assessment data validates that the program met SLO 1- written communications appropriate to the construction discipline

<b>Create construction project schedules SLO 5</b>				
Assessment Tools	Performance Indicator	Type of Assessment	Performance Criteria	Outcomes
Course Learning Outcomes (CLO's)	CM330 Planning & Scheduling Term Project (spring 15)	Direct	70% of students passing with 70% and above	98%
	CM450 Construction Capstone Project Term Project (spring 15)	Indirect		95%
Outcome Survey	Graduating Senior Survey (fall 15)	Indirect	70%	70%

### Summary

The outcome results show that the performance criteria were met or exceeded with all utilized assessment tools. The term project in CM450 class is a group project and the program considered as indirect assessment but in CM330 the term project is an individual activity for each student in class.

### Action Taken

No action item was considered at this time

## Conclusions

The assessment data validates that the program met SLO 5- Create construction project schedules

<b>Apply electronic-based technology to manage the construction process SLO 10</b>				
Assessment Tools	Performance Indicator	Type of Assessment	Performance Criteria	Outcomes
Course Learning Outcomes (CLO's)	CM330 Planning & Scheduling Term Project scores (spring 15)	Direct	70% of students passing with 70% and above	98%
	CM450 Construction Capstone Project Term Project (spring 15)	Indirect		95%
Outcome Survey	Graduating Senior Survey (fall 15)	Indirect	70%	70%

## Summary

The outcome results show that the performance criteria were met or exceeded with all utilized assessment tools.

## Action Taken

No action item was considered at this time

## Conclusions

The assessment data validates that the program met SLO 5- Create construction project schedules

Understand different methods of project delivery and the roles and responsibilities of all constituencies involved in the design and construction process SLO 12				
Assessment Tools	Performance Indicator	Type of Assessment	Performance Criteria	Outcomes
Course Learning Outcomes (CLO's)	CM 210 Construction Materials & Methods I Quizzes scores (fall 15)	Direct	70% of students passing with 70% and above	91%
	CM210 Construction Materials & Methods I Exams scores (fall 15)	Direct		71%
	CM340 Construction Project Management Exams scores (fall 15)	Direct		82%
Outcome Survey	Graduating Senior Survey	Indirect	70%	90%

**Summary**

The outcome results show that the performance criteria were met or exceeded with all utilized assessment tools. There are two exams in in CM340 Construction Project Management class that qualify the student to earn two certifications from DBIA-Design Build Institute of America; first one is the Fundamentals of Project Delivery and the second one is the Principle of Design-Build Project Delivery. The two exams are approved by the DBIA.

The assessment results in CM340 for spring 2015 was 68% and did not meet the performance criteria for this outcome. And action was taken in fall 2015 by the instructor to enforce more the class materials and increase the frequency of quizzes and extend the coverage of the content in the subsequent construction capstone class. The follow up analysis results in fall 2015 in the previous table shows 82% passing rate with scores 70% or more in this class in both exams, and the students were able to score high in other class assessments which met the performance criteria.

**Action Taken**

As noted above the faculty member who teaches CM340 decided to increase the number of quizzes before each exam to encourage students to study more frequently and understand and retain the information more successfully. As this class results obtained from spring 2015 a follow up steps in fall 2015 has been conducted and will be analyzed for improvement.

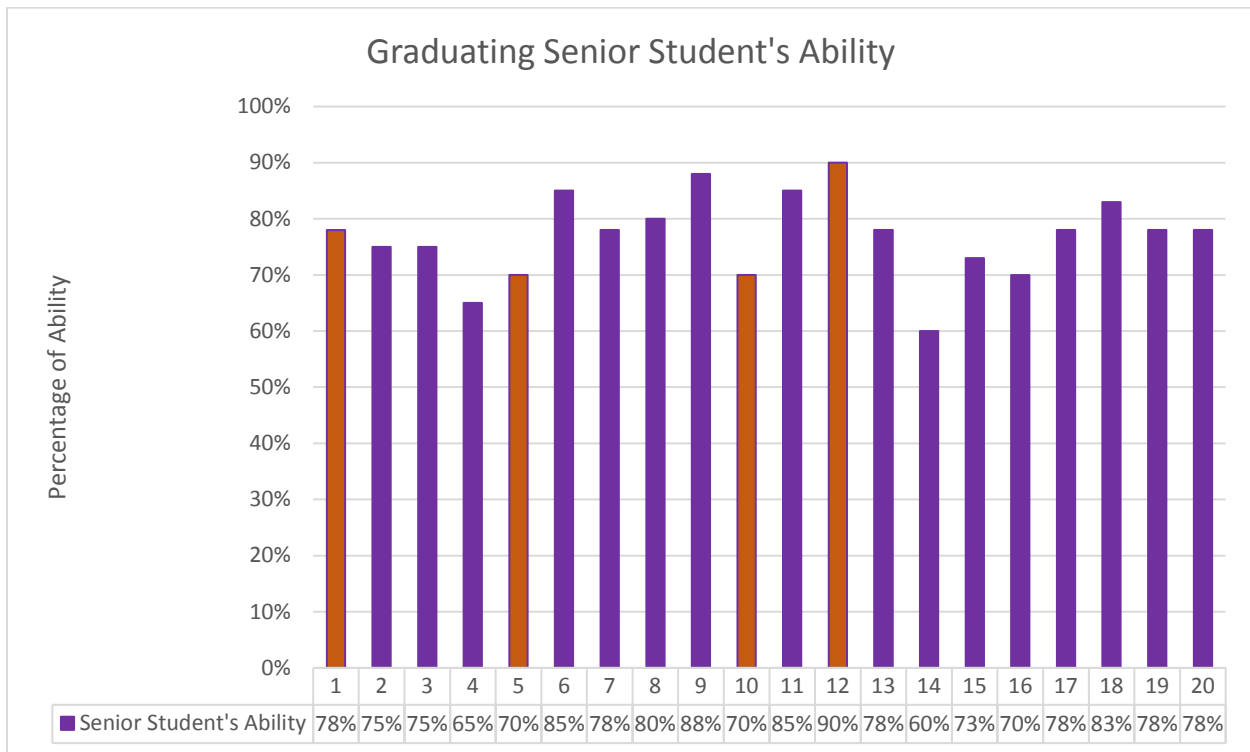


## Conclusions

Even the other performance criteria were met or exceeded, it was important to investigate the other criteria that was not met in spring 2015 to improve the overall learning experience of students to satisfy SLO 12 in fall 2015

## Graduating Senior Survey

The survey structure has been updated in fall 2015 to reflect the new outcomes and the data is for fall 2015. The students have been asked to give their feedback on the classes, the program facility, and their preparedness and ability with the respect to the program learning outcomes PLOs.



## Conclusions

The updated survey results show that the student/ program learning outcomes with respect to students ability have met the performance criteria target for all PLOs except for PLO#4 Create Construction Project Cost Estimate and PLO#14 Understand Construction Accounting and Cost Control.

The program will analyze the results and assess the data with the faculty to improve the results in the future.

The assessment results for the assessed PLOs in fall 2015 is listed in the table below;

<b>ACCE SLO's</b>	<b>Outcomes</b>
1. Create written communications appropriate to the construction discipline.	78%
5. Create construction project schedules.	70%
10. Apply electronic-based technology to manage the construction process.	70%
12. Understand different methods of project delivery and the roles and responsibilities of all constituencies involved in the design and construction process.	90%

#### Conclusions

The updated survey results show that the assessed student/ program learning outcomes with respect to students' ability feedback have met the performance criteria target. The qualitative data in the survey results will be further evaluated in spring 2016 by IAB and faculty for the degree program continuous improvement.