Section
4

Assessment Report for the Construction Management Program

Executive Summary

The annual assessment report provides the opportunity to review the state of the construction management (CM) program at Roger Williams University (RWU). This annual report covers the academic year beginning in August 2014 and ending in July 2015 (AY 14-15). Its focus is on the academic assessment through the year. Based on a review of the course assessment reports as well as surveys, examinations, and discussions with students and recent graduates, it is evident that the state of the program remains to be strong.

The program faculty met on May 7, 2015 to review the 2014-2015 academic year and to discuss changes for the upcoming year. During this meeting, CM faculty reviewed all published program outcomes and the metrics we are using to measure each. Reports were also made on our internship program, the CM club, Sigma Lambda Chi (SLC) student association, RWU US Green Building (USGBC) Student Group, Capstone project, Senior exit surveys, Alumni Survey and the Associate Constructor (AC) Level 1 exam. The meeting agenda and the reports made are included in Chapter 5 of this assessment report.

Overall this was another strong year for the Construction Management program. Some of the highlights of the year are as follows:

- Our 5th annual Alumni and Senior Banquet was held on May 1, 2015. At this event our Capstone Project winners were announced and our graduating senior class (Image 4.0.1) were introduced to our program alumni.

Image 4.0.1. *Class of 2015 with some of the CM faculty at the 5th Annual Alumni and Senior Banquet*

- Dr. Celik began his new role as the new Program Coordinator in the AY 14-15 academic year.

- CM Program adopted the new ACCE Student Learning Outcomes as the new Program Outcomes. New outcomes will be implemented starting 2015-2016 academic year.

- CM Program through an inclusive and participatory approach accepted the new CM Program Mission and Objectives to be implemented starting 2015-2016 academic year. First assessment of the new program objectives will be included in the 2015-2016 Program Assessment.

- The student population dropped with the fall 2014 enrollment at 122 students less than the fall 2013 enrollment of 127.

- Our CM Design-Build (DB) team won 1st Place in the Associated Schools on Construction (ASC) Region 1 Student Competition.

- Our CM Heavy-Highway (HH) team won 3rd Place in the Associated Schools on Construction (ASC) Region 1 Student Competition.

- A student team of 4 (2 CM and 2 Architecture students) attended the Design Build Institute of America (DBIA) National Student Competition for the first time as the winners of the Northeast Region and a Top 10 program in the country.

- The CM Professional Advisory Board (CMPAB) awarded its fifth endowed scholarship to Antonia Papadopoulos (Image 4.0.2)

- Sigma Lambda Chi student group has won an award at the ASC International Conference, for their success in recruitment of an honorary member, John Saunders (Skanska – Retired) (Image 4.0.3).

***Image 4.0.2**. CM Senior, Antonia Papadopoulos receiving her scholarship from William Thumm (Chair – CMPAB) and Danielle Crawford (Board Member – Development Committee/CMPAB)*

***Image 4.0.3**. SLC 2014 Excellence in Honorary Member Installation Award*

1. Introduction

The Construction Management program was reaccredited by the ACCE in spring 2005 and in spring 2011. In October 2006 the SECCM published a comprehensive Assessment Plan that detailed the assessment process for the school and each program. The Construction Management program has submitted annual assessment reports in compliance with this plan since AY 2005-2006. This report will address the 2014-2015 academic year.

Each year the program faculty reviews the instruments used to gather assessment data making the necessary adjustments to streamline the effort and to attain better information. Next, program faculty members use these data to measure our success in meeting our defined objectives and outcomes as they have been described in the SECCM Assessment Plan. Successes, failures and metric adjustments are discussed on an annual basis. Programmatic adjustments made in previous years are also assessed on an annual basis as well as changes that are implemented for the following year.

The generation of formal reports (written for the first time in AY 2006-2007) for the Internship program, Construction Management Student Club, the Associate Constructor exam, Capstone Project, Sigma Lambda Chi and the USGBC was continued this year. Over the last year two years, CM Alumni were surveyed at our Senior Alumni Banquet. This led to good number of responses, but not a broad, representative cross-section of alumni. Beginning in 2012-2013, faculty decided to focus on a specific year group – graduates 4 years out from graduation. We targeted 2009 graduates last year and continued with 2010 graduates this year.

These reports, along with inputs from course transcripts, exit surveys, alumni surveys, capstone juror reports, student competition performance, course binders and advisory board communications were used to perform this annual assessment.

The program faculty met on May 7, 2015 to discuss the above reports and to conduct this annual assessment. At this meeting, program performance for AY 2014-2015 was assessed and adjustments in outcomes and metrics were made for coming year. Faculty specifically discussed new metrics for the newly adopted program outcomes that will be in effect for AY 2015-2016. During the assessment, faculty discussed several potential curriculum change drafts to be pursued in AY 15-16. Program coordinator informed the CM faculty of the latest status of the CM Strategic Plan and had discussions with the faculty prior to finalizing the new “CM Program Mission and Objectives”. The new mission and objectives were developed in collaboration with the industry, alumni, students, and faculty as a part of the Strategic Plan to be updated for use in AY 15-16. The new CM Program Mission and Objectives can be found in Tab J along with various memos describing the participatory process used to establish them. All of the above topics are addressed further within the body of this report.

A complete list of all CM faculty meetings along with the meeting themes during the 14-15 AY are given below:

- September 10, 2014 (Start of AY 14-15 – General meeting)
- December 10, 2014 (General meeting – Follow up)
- March 24, 2015 (Strategic Plan meeting – SWOT Analysis of the CM Program)
- May 7, 2015 (Program Assessment and Strategic Plan Final Workshop)

Tab C includes meeting agendas for the meetings shown above.

2. Analysis of Evaluation Instrument Data

Present

This assessment report considered both formal and informally gathered data. The formally gathered input information included transcript review, Senior Exit Survey results (Tab D), Senior Capstone Report (Tab E), Associate Constructor Level 1 Examination Report including exam performance (Tab F), CM Club Report (Tab G), and USGBC and SLC Reports (Tab H). Informal data included informal conversations among faculty, between faculty and students, and between faculty and industry. The Associated Schools of Construction student competition serves as an excellent assessment input – our student's work is formally assessed and scored by industry professionals.

Senior exit surveys were performed both by CM faculty as well as the industry members. For the sixth time, the CM advisory board through the academic subcommittee coordinated our senior exit surveys. Two program alumni formed the panel, which met with all but graduating seniors. Seniors also filled out a survey. Both the written survey results and a report from the alumni panel can be found at Tab D.

For the fifth time, as recommended for the first time in our AY 2009-2010 assessment process, this year's two capstone projects were held in a competition format and with each focusing on a different project type. The projects were corporate sponsored and a SECCM alumni team coordinated each project. The capstone project winners were announced at our 5th Annual CM Alumni and Senior Banquet. Tab E provides additional details on the Capstone Project.

Program faculty also gather input from professional associations such as AGC, ASC, CSI, ACCE and ASCE. At these meetings faculty stay abreast of changes in accreditation standards and construction education "best practices" as regularly reported at these venues. One of the major meetings this year was the ACCE meeting in California where the new student learning outcomes of ACCE were further introduced through workshops and meetings. Three faculty members attended the meeting to strengthen the program's understanding of the new accreditation standards as we approach our documentation year in 2015-2016 AY. Both permanent and intern employers provided feedback to the faculty on student performance. Formal internship reports are particularly valuable. Professional Advisory Board members also provide valuable support and feedback to the faculty. Tab I includes copies of our CMPAB meeting minutes.

This year, changes were made to course syllabus format as well as the course assessment reports in order to standardize course documentation and assessment across all CM courses. Within each course assessment report instructors evaluate each course learning outcome (CLO) with direct and indirect assessment measures. Faculty members also provide baseline performance standards and whether the students meet them. As a part of a continuous quality improvement plan, within the course assessment reports, faculty members provide an action plan to be utilized in the upcoming semesters. Faculty members provide formal course reports for each course they taught after each semester. The Program Coordinator and the Dean review these reports and further discussions take place in regular program meetings among the CM faculty to facilitate adjustment in course coverage and the overall program.

Adjustments for Next Year

As suggested last year, we did not interview program alumni at the Alumni Survey Banquet and instead contacted all 2010 alumni in advance of the banquet. Qualtrics survey online software were used in the process. Unfortunately, alumni response was very weak, netting only 3 respondents. 2010 alumni were sought out both through "Linked In" as well as through the RWU Alumni database.

Our CMPAB Alumni Committee, RWU Alumni committee and faculty are all working to strengthen the CM alumni database in the hope that we can reach more graduates. We also plan to appoint class leaders who we will ask to help us reach out to graduates within their class and coordinate specific class activities like this survey. Additionally, our redesigned web site will be linked to a "Linked In" RWU CM Alumni group that should facilitate better alumni contact. Program is working on a strong database of CM graduates on Linked-in. Combined with the alumni database from the Development Office, we are hoping to increase participation rates significantly.

3. Program Assessment

The program educational objectives were first presented in the format given in Table 4.3.1 in the 2007-2008 academic year. As a part of developing a comprehensive strategic plan for the CM program, these objectives are updated during the 2014-2015 AY (Tab H). The newly updated CM Program objectives will be assessed for the first time in the upcoming program assessment by the end of AY 2015-2016. Table 4.3.1 lists the program educational objectives that the CM program followed during 14-15 AY.

Table 4.3.1 RWU Construction Management Program Educational Objectives

Objectives – Three to Five Years After Graduation, We Expect Our Graduates To:
1. Demonstrate exemplary technical knowledge and skills while achieving success as a practicing constructor and leader, and always displaying the highest standards of ethical conduct.
2. Value the concept of life-long learning and continue to grow intellectually while keeping informed of new concepts and developments in the construction process.
3. Advance the construction management profession by becoming actively involved in professional associations and societies, serving in professional and community volunteer positions, and acting as a role model for the future generation of constructors and the Roger Williams University Construction Management students.

Assessment of CM Program Educational Objectives

An Alumni Survey was sent out to 2010 alumni prior to our Alumni and Senior Banquet. Only, three surveys were completed. This return rate is statistically not representative of the program's alumni and extensive use of it in the assessment of program objectives would be misrepresentative. Low return rates in this survey have been ongoing and the program is in the process of switching to utilizing social media to reach alumni.

Starting in 2012-2013, CM students have been asked to join a Linked-in CM group to allow the program faculty and administration to stay in touch post their graduation. Since many of our graduates continue to update their resumes online, we have been collecting better and more reliable data for the past few years. Targeting graduates that are four years out from graduation is expected to produce better results starting next academic year but mostly in 2017-2018 assessment with more than 80% of the Class of 2013 currently part of the online group. See Figure 4.3.1 for the current statistics of the Linked-in CM Group. This report also utilizes data from the Linked-in group, specifically the 21 members of the Class of 2010. Class of 2010 represents the class that is 4-5 years out of college and data collected specifically from them is used to assess program educational objectives. Figure 4.3.2 illustrates the basic demographics of the Class of 2010 including what they do, where they work, and what they report as their strongest skills.

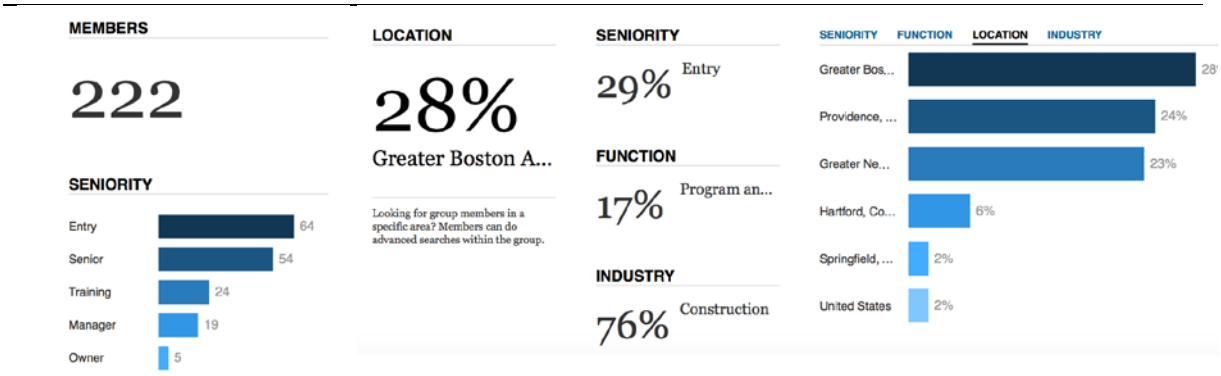

Figure 4.3.1 RWU Construction Management Linked-in Group Statistics as of 08.22.2015

CLASS OF 2010 – DATA FROM 21 GRADUATES – 4 TO 5 YEAR OUT OF GRADUATION

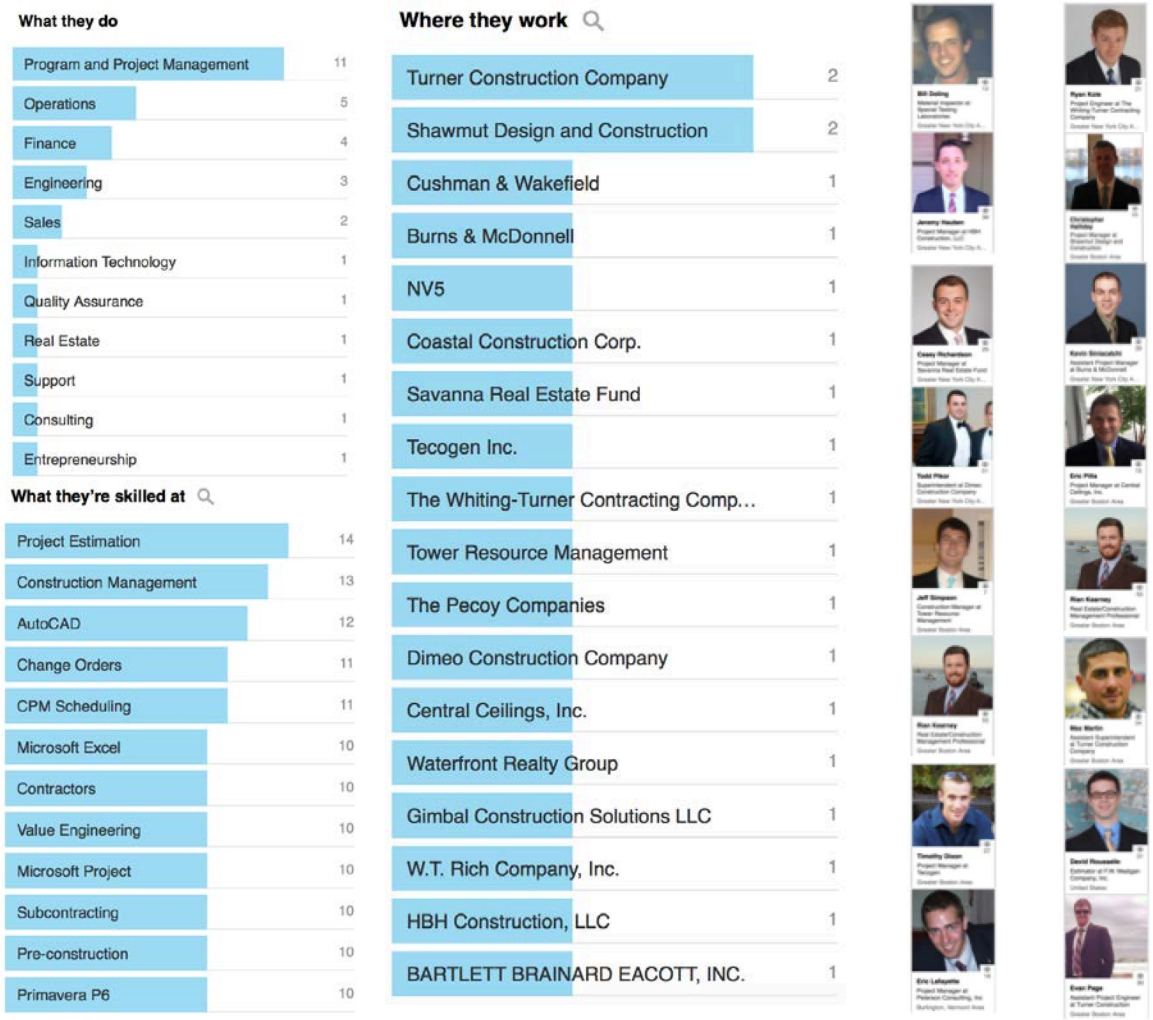

Figure 4.3.2 Class of 2015 Representative Statistics as of 08.22.2015

Below is an assessment of all three program educational objectives. As stated previously in this report, starting AY 2015-2016, we will begin assessing our new CM Program Objectives that can be found in Tab J.

1. Demonstrate exemplary technical knowledge and skills while achieving success as a practicing constructor and a leader, and always displaying the highest standards of ethical conduct.

Based on data from the Linked-in group, 67% of the Class of 2010 is holding a minimum of a Project Manager and/or Superintendent level position. These levels of positions in the construction industry usually require a minimum of 5+ years of experience and in many companies that our graduates work, experience requirement is much higher. Having two thirds of our sample having already achieved these positions is an indicator of their technical knowledge and skills as well as their role as leaders in the industry. Although not statistically significant, the alumni survey administered to the Class of 2010 indicates that 100% of the respondents agree that the CM program has helped them with this specific objective.

2. Value the concept of lifelong learning and continue to grow intellectually while keeping informed of new concepts and developments in the construction process.

Although 100% of the alumni survey respondents indicated that the CM program at RWU emphasized the value of this objective, based on our research of the Class of 2010, only approximately 10% of the class of 2012 indicates to have attended or attending a graduate program on their online resumes. We understand that pursing a graduate degree is not the only metric of measuring this objective. For example, approximately 40% of the class of 2012 lists post-graduation certifications on their resumes online. We are in the process of identifying further metrics to measure this objective within the revised objectives for AY 2015-2016.

3. Advance the construction management profession by becoming actively involved in professional associations and societies, serving in professional and community volunteer positions, and acting as a role model for the future generation of constructors and the Roger Williams University Construction Management students.

100% of the alumni survey respondents agree that the CM program taught them the importance of this objective. Approximately 30% of the class of 2012 list on their online resumes that they are members of at least one professional association. Approximately 20% of them state online that they had or have been volunteering in community positions since graduation. In addition to the class of 2010, when all RWU graduates working in the construction industry is analyzed, RWU earns the 4th ranking among all of ASC Region 1 schools for their interest in skilled volunteering (3.2%).

Alumni involvement on our CM Advisory Board and as members of our capstone review panel has been significantly growing in the past few years. The alumni subcommittee of our CM Advisory Board sponsored the fifth annual CM Alumni and Senior banquet on May 1st (Image 4.3.1).

Image 4.3.1 Fifth CM Alumni & Senior Banquet – May 1, 2015 – Bristol Yacht Club, Bristol, RI

The event was organized by CM alumni and culminated a day filled with CM alumni program involvement. Alumni participated both as capstone project judges and volunteered to meet with all graduating seniors as part of the senior “exit survey” process (Image 4.3.2).

Image 4.3.2. Capstone project presentations – May 1, 2015

William Thumm from Hensel Phelps Construction, the Chair of the Construction Management Professional Advisory Board, received this year’s Alumni Distinguished Person Award (ADPA) (Image. 4.3.3).

Image 4.3.3. RWU CMPAB Chair, William Thumm receiving his Alumni Distinguished Person Award from Prof. Gould (ADPA 2014 Recipient) – May 1, 2015, Bristol, RI

Antonia Papadopoulos was recognized as the top CM graduate. Antonia also was the recipient of the CMPAB Scholarship this year as well as the Presidential Medallion (Image. 4.3.4)

Image 4.3.4. Top CM graduate Antonio Papadopoulos receiving her certificate from Dr. Celik

To better identify the interrelationship between the program educational objectives and the program outcomes, Table 4.3.2, is presented below.

Table 4.3.2. Program Educational Objectives Linked to CM Program Outcomes

Outcomes (a through i)	Technical knowledge, success as a practicing constructor and leader, display the highest standards of ethical conduct	Lifelong learning	Advance the construction management profession, service, role model, assist SECCM
a. an ability to apply knowledge of mathematics and science to typical Construction Management tasks	S	M	M
b. effective research and problem solving skills applied to typical Construction Management tasks	S	S	M
c. an ability to plan, organize and control a construction project	S	M	M
d. an ability to lead and/or function as a member of a team	S	S	S
e. an understanding of professional and ethical responsibility	S	S	S
f. an ability to communicate effectively	S	S	S
g. the broad education necessary to understand the impact of construction in a global, economic, environmental, and societal context	S	S	S
h. a recognition of the need for, and an ability to engage in lifelong learning	S	S	S
i. a knowledge of contemporary issues	S	S	S
W = Weak Relationship M = Moderate Relationship S = Strong Relationship			

Program graduates continue to stay involved with the construction management program as members of the advisory board, mentors to our competition teams, guest speakers and employers of our most recent graduates. All of these graduates speak highly of the education they received at Roger Williams University and, given the overall success they have had in their careers, it is evident that our graduates are attaining our program objectives.

Based on the anecdotal information collected from our graduates' employers, online resumes as well as the feedback received from the graduates themselves, the program faculty members believe that the Program Educational Objectives are being satisfied. As alumni involvement grows the program continues to seek more and better ways to engage and learn about our program. It is important to note once again that the CM program has decided to proceed in AY 15-16 with a new set of program objectives, which includes the objectives discussed in this section and adds for further depth and a more comprehensive vision for our students and alumni.

Assessment of CM Program Outcomes

In our assessment plan metrics were defined to assess each program outcome on an annual basis. The tables below outline each program outcome, defined metrics, and a summarization with comments as to whether or not the identified metric was met. The outcomes and metrics as defined in the table are what the faculty evaluated for the AY 13-14 academic year. As noted earlier in this report, during the AY 14-15, the CM program faculty voted to adopt the new twenty (20) ACCE Student Learning Outcomes (SLOs) to replace the current program learning outcomes (PLOs) starting in AY 15-16.

Outcome a: an ability to apply knowledge of mathematics and science to typical Construction Management tasks			
Metrics Associated with Outcome a:	**Where Measured**	**Met**	**Comments**
1. CM student pass rate of the AC exam meets or exceeds the national average	AC Exam	Yes	5 out of 6 who sat passed. 83% pass.
2. All graduating seniors report that they have achieved proficiency in the ability to apply knowledge of mathematics and science to solve construction problems. Proficiency is defined as a mean and median score of 4 or above on a 5 point scale where 5 means proficiency achieved and 1 means proficiency not achieved.	Course Student Survey Student Exit Survey	No	3.92/5 Action: The survey needs to be reassessed to make sure that the students are given sufficient time to answer the questions. There could be a situation where they were rushed to answer thus mostly chose 3/5 as a safe choice.
3. Faculty report adequate application of mathematics in construction coursework.	Course Assessment Report	Yes	87% of courses had application (13/15)
4. Alumni rate their preparation for the workplace proficient in the use of mathematics and science to solve construction management tasks. Proficiency is defined as a mean and median score of 4 or above on a 5 point scale where 5 means proficiency achieved and 1 means proficiency not achieved.	Alumni Survey Employer Survey	?	Alumni survey was targeted towards the class of 2010. 3 out of 42 responded. Will attempt to contact one more time via social media. We will continue to identify class rep (This year: Pat Flattery – CM President). Ask for rep's help to reach out and revisit this question.

Outcome b: effective research and problem solving skills applied to typical Construction Management tasks			
Metrics Associated with Outcome b:	**Where Measured**	**Met**	**Comments**
1. At least 50% of all CM courses will require research and problem solving skills.	Course Binders	Yes	67% (10/15 courses either problem solving or research component)
2. At least 10% of all Construction Management seniors will participate in a competition where their ability to research and solve problems and will be externally judged and assessed.	Student Competitions	Yes	28% (7 out of 25 graduating seniors participated). Students who participated in the competitions were superior in their capstone presentations.
3. Graduating seniors report that they have achieved proficiency in the ability to solve construction problems. Proficiency is defined as a mean and median score of 4 or above on a 5 point scale where 5 means proficiency achieved and 1 means proficiency not achieved.	Student Exit Survey	No	3.68/5 (Research and open ended problems in construction)
4. Alumni rate their preparation for the workplace proficient in the area of research and problem solving. Proficiency is defined as a mean and median score of 4 or above on a 5 point scale where 5 means proficiency achieved and 1 means proficiency not achieved.	Alumni Survey Employer Survey	N/A	Employer survey does not have a question specific to this metric. Alumni survey does not have sufficient number of responses.

Outcome c: an ability to plan, to organize and to control a construction project			
Metrics Associated with Outcome c:	**Where Measured**	**Met**	**Comments**
1. 100% of Construction students participate in a Capstone Project Class that involves a semester long industry sponsored project that demonstrates their ability to successfully plan, organize and control a project.	Capstone Project Juror Evaluations Transcript Review	Yes	100%
2. Employment/Internship Interviewers rate applicants proficient for internship and permanent placement in the applicant's ability to plan, organize and control a construction project. Proficiency is defined as a mean and median score of 4 or above on a 5 point scale where 5 means proficiency achieved and 1 means proficiency not achieved.	Employer Survey	Yes	Scheduling: 9/9 satisfied Overall Performance: 10/10 excellent or very good.
3. Employers/internship rate proficient RWU Construction Management hires in their ability to plan, organize and control a construction project. Proficiency is defined as a mean and median score of 4 or above on a 5 point scale where 5 means proficiency achieved and 1 means proficiency not achieved.	Employer Survey	Yes	Estimating: 8/10 satisfied Scheduling: 9/9 satisfied Overall Performance: 10/10 excellent or very good.

Outcome d: an ability to lead and/or function as a member of a team			
Metrics Associated with Outcome d:	**Where Measured**	**Met**	**Comments**
1. 100% of students participate as a team member as they complete their Capstone project. Each team member brings different construction experiences to the project.	Transcripts Capstone Project juror evaluations Course Assessment Report Student Survey (Group Satisfaction)	Yes	Every student was on a team. Faculty to consider different metrics to measure the highlighted section of the metric.
2. 100% of all Construction students will participate in the university CORE sequence and University Core Senior Seminar.	Transcripts	Yes	Mandatory.
3. At least 50% of construction courses will give students the opportunity to work on collaborative team projects.	Course Binders Course Assessment Report	Yes	67% (10/15)
4. At least two student-led teams will participate in the Associated Schools of Construction Region 1 student competition[1]	Student Competitions	Yes	3 teams attended ASC Region I. One team attended DBIA Regionals.
5. At least 75% of work eligible construction management students will have held a construction related summer position, internship or co-op, or construction management work-study related position by the time of graduation.[2]	Senior Exit Survey	Yes	96% 24/25.

[1] Consider adding other competitions/activities

[2] Reconsider 75% goal. Possibly look into 100% for those work eligible students. Also consider another metric specific to the international students' internship experience (i.e. %50)

Outcome e: an understanding of professional and ethical responsibility			
Metrics Associated with Outcome e:	**Where Measured**	**Met**	**Comments**
1. 75% of graduating seniors will sit for the AC exam.	AC Examination	No	24% (6/25 took the exam). Action: Review the exit survey results for reasons of not taking the exam. Talk to CMPAB to explore opportunities for more requirements regarding the AC level exam. Faculty to discuss developing a comprehensive exam to measure program outcomes directly. Consider adding more national exam alternatives in to the metric and keep 75% same. Consider incorporating the AC exam into a course that is required for graduation. Consider switching semesters on when to take it. Consider marketing the exam to the seniors as early as possible.
2. All students will develop and present a case that focuses on professional and ethical responsibility.	Course Binders	Yes	100% of capstone students did so.
3. At least 25% of all construction management classes will address, and students will demonstrate an understanding of professional and ethical responsibility.	Course Binders Course Student Surveys	No (with a note)	20% NOTE: Only those courses with ethics related outcomes in the syllabi were counted in this number. There are more courses that cover this topic in many discussions. To make it official, we decided to add ethics related outcomes to CNST 321, CNST 450, CNST 475. With this addition the percentage increases to 40%, which exceeds our goal.
4. Graduating seniors report that they have an understanding of their professional and ethical responsibilities. Understanding is defined as a mean & median score of 4 or above on a 5 point scale where 5 means proficiency achieved and 1 means not.	Senior Exit Survey	Yes	4.4/5

Outcome f: an ability to communicate effectively			
Metrics Associated with Outcome f	**Where Measured**	**Met**	**Comments**
1. At least 85% of all mentors and potential employers agree that graduating seniors possess ability to communicate effectively.[3]	Capstone Jury Graduate employer survey	Yes	100% for written 90% for oral
2. 100% of seniors will have the opportunity in construction classes to make an oral presentation at least twice a semester in their senior year.	Course Binders Course Assessment Report	Yes	100%
3. 100% of all freshmen will have the opportunity to make an oral presentation in a construction class at least 2 times per year.[4]	Course Binders Course Assessment Report	No	One time a year in CNST 100.
4. 100% of graduates will produce an acceptable senior capstone oral report as evaluated by external and internal review.	Capstone Jury	Yes	Based on visual observation of faculty of the capstone presentations.[5]
5. Alumni report that their RWU education has prepared them proficiently in communication skills for the workplace. Proficiency is defined as a mean and median score of 4 or above on a 5-point scale where 5 means proficiency achieved and 1 means proficiency not achieved.	Alumni Survey	N/A	Survey does not have enough respondents. Faculty to continue seeking responses to improve.
6. Graduating seniors report that they are satisfied with "Practicing strong oral and written communication skills". Satisfied is defined as a mean and median score of 4 or above on a 5 point scale where 5 means proficiency achieved and 1 means proficiency not achieved.	Exit Student Survey	Yes	4.08/5

[3] Add "an above average" to the metric. 80% for written and 70% for oral would have been the assessment if "above average" is the metric.
[4] Consider reducing "twice" down to "once" and adding sophomore and junior years into the metric.
[5] Consider collecting data from capstone evaluation sheets and seek 3.5/5.

Outcome g: **the broad education necessary to understand the impact of construction in a global, economic, environmental, and societal context**			
Metrics Associated with Outcome g	**Where Measured**	**Met**	**Comments**
1. 100% of construction students fulfill the Multidisciplinary Core Education component as well as the Core Concentration component of study to include the Core Senior Seminar.	Transcripts	Yes	Mandatory
2. At least 25% of construction courses address this outcome.	Course Assessment Report Course Binders	Yes	4/15. Note to faculty: Add relevant course outcomes to the syllabi (CNST 100, 445, 480, 455)
3. At least 1 guest speaker per semester will address the above outcome.	CM Club Report	Yes	Consigli (environmental issues) Dennis Group (economic context)
4. Graduating seniors rate themselves proficient with the broad education necessary to understand the impact of construction in a global, economic, environmental and societal context. Proficiency is defined as a mean and median score of 4 or above on a 5 point scale where 5 means proficiency achieved and 1 means proficiency not achieved.	Senior Exit Survey	No	3.72/5 ACTION: More guest speakers regarding this outcome. Explore ways to connect the core courses into the construction program outcomes. Add this outcome to more course outcomes (consider CNST 200, 201, etc.)

Outcome h: **a recognition of the need for, and an ability to engage in lifelong learning**			
Metrics Associated with Outcome h	**Where Measured**	**Met**	**Comments**
1. 75% of graduating seniors will sit for the AC exam.	AC Exam Results	No	24% (6/25 took the exam). Action: Review the exit survey results for reasons of not taking the exam. Talk to CMPAB to explore opportunities for more requirements regarding the AC level exam. Faculty to discuss developing a comprehensive exam to measure program outcomes directly. Consider adding more national exam alternatives in to the metric and keep 75% same. Consider incorporating the AC exam into a course that is required for graduation. Consider switching semesters on when to take it. Consider marketing the exam to the seniors as early as possible.
2. At least 50% of CM students will be active members in the CM club. [6]	CM Club Report	Yes	
3. Alumni indicate participation in professional training, professional societies or a graduate school since graduating from RWU. Adequate participation is defined as a mean and median score of 4 or above on a 5 point scale where 5 means participation achieved and 1 means participation not achieved.	Alumni Survey	N/A	Survey does not have enough respondents. Faculty to continue seeking responses to improve.
4. Graduating seniors rate their education as having increased their motivation to become lifelong learners. Proficiency is defined as a mean and median score of 4 or above on a 5 point scale where 5 means proficiency achieved and 1 means proficiency not achieved.	Senior Exit Survey	No	3.96/5. ACTION: Guest speakers, CMPAB/alumni mentors

[6] Consider revising the metric as “Every CM Club event will have a minimum of 40% attendance”

Outcome i: **a knowledge of contemporary issues related to the construction industry**			
Metrics Associated with Outcome i	**Where Measured**	**Met**	**Comments**
1. All (100%) of construction students will be exposed to contemporary issues through the Multidisciplinary Core Education component as well as the Core Senior Seminar course	Course Binders	Yes	Mandatory
2. At least 25% of construction courses will address this outcome.	Course Binders Course Assessment Report	Yes	4/15 = 27%
3. Graduating seniors will rate themselves proficient in knowledge of contemporary issues Proficiency is defined as a mean and median score of 4 or above on a 5 point scale where 5 means proficiency achieved and 1 means proficiency not achieved.	Construction Student Exit Survey	No	3.76/5 ACTION: Guest speakers, mentors, CNST 455 and 480 to officially incorporate this outcome into learning outcomes
4. All (100%) of construction students will be exposed to contemporary issues in their senior year.	Course Binders	Yes	Capstone and PM
5. All (100%) of construction students will participate in the Feinstein Service Learning Requirement of at least 5 hours in the surrounding community.	Transcripts	Yes	Mandatory

4. Assessment of Previously Implemented Program Changes

Discussion of changes made last year follows:

Curriculum change AY 1314-1 changed the semester offered for CNST 130 from the fall to the spring semester. Offering the course during the spring semester allows basic concepts (drawing, reading of simple drawings, route surveys, excavation estimation, etc.) to be introduced in the fall in CNST 116, Computer Applications for Construction Management. Application tools introduced during fall (AutoCAD, Excel, MS Project, and Revit) could then be applied during the course with a more demanding set of plans and specifications (GHH) during the spring semester. When dealing with the takeoff and estimation in CNST 130, the students will be able to apply the skills gained in CNST 116 during the fall semester. A potential negative result was having the students take CNST 200, Construction Methods and Materials and Lab without having completed CNST 130. To address this potential difficulty the syllabus for CNST 130 is adjusted to insure that all plans and specification knowledge required in CNST 200 is covered at least one week before being applied in CNST 200. Although the faculty have not yet made clear positive or negative comments, more time is needed to measure the true impact of this change.

Curriculum change AY 1314-2 changed the semester offered for CNST 116 from the spring to the fall semester. Offering the computer applications course in the fall is intended to promote using the software and analysis techniques in CNST 130 during the spring semester. Changing the sequence was intended to reinforce the application of the computer skills when the students venture forth to their first internship during the Freshman-Sophomore summer. By offering CNST 116 in the fall semester, CM faculty planned to compress some of the drawing topics to allow the introduction of Revit, a key building block for BIM (Building Information Modeling). New syllabus for CNST 116 includes basic BIM software although more time needed to measure the impact of the change in higher-level classes.

Curriculum change AY 1314-13 replaced the required business elective in the major with business elective from the following courses: MGMT 336, FNCE 301, ACCTG 304, MRKT 335, and ENGR 335. This change created more structure to the business elective choice of the CM students. These options were determined by the CM faculty after a thorough review of the entire business curriculum. Options are provided the student in each of the major business school sectors. Business courses selected are offered both semesters, are of reasonable rigor, and require prerequisite courses our CM student has taken. This change has yet to affect any students since this is a senior level business elective and that our seniors who graduated in 14-15 were advised based on the AY10-11 catalog.

5. Discussion of Recommended Program Changes

Four curriculum changes were made and approved this year:

AY 1415-1: Take CNST 445, Construction Project Management and Safety, out of required courses for the CM Minor and add it to the list of electives for the minor.

AY 1415-2: Add CNST 455, Mechanical and Electrical Design for Buildings, to the list of electives for the CM Minor.

AY 1415-3: Change the "Required Four Courses" to "Required Three Courses" in the CM Minor Requirements

AY 1415-4: Change the CM minor electives from "Select two" to "Select three"

As mentioned in Section 2 a number of formal reports were made this year which were reviewed and discussed with the faculty. Below are summaries of these reports that presented in various tabs at the end of this report:

Internship Program

In the AY 2014-2015, faculty and administration as well as the RWU Career Center continued to encourage all students to get involved with internships specifically during the summer periods. Approximately 78% of all students (who took the survey) in the CM program reported to have a paid employment experience during the summer of 2014. Approximately 85% of all seniors had paid summer employment in 2014. This year, our program finally met the 100% internship goal with the graduating class of 2014. This is a great achievement compared to the previous year. It means that every single student of the graduating class of 2014 had at least one internship experience prior to graduation. The average internship experience for this class was 2.45 prior to graduation.

In addition to surveying sophomores, juniors, and seniors, we have continued to survey the employers to get feedback about our students. Every fall semester, a survey is sent out to the most recent employers of our current senior class. Seven of the employers of the graduating class have responded to the survey this year. Employers were asked to evaluate our students based on 20 different areas such as “responsibility”, “CAD proficiency”, and “technical knowledge”. Among the 20 areas, our students scored highest in “dependability”, “attendance”, “punctuality”, “cad skills”, and “excel proficiency”. Some of the areas that can be further improved included “maturity/poise”, “quantity of work” and “technical knowledge”. Based on the performance evaluation of the students by the employers in each of the 20 areas, each student receives an average performance score. Internship average performance score of our seniors, as determined by their immediate supervisors this year has increased to 86.4% compared to the 80% AY 2013-2014. CM program will continue to evaluate the feedback from employers, as well as the students themselves to further improve the internship rates and seniors’ performance scores in the upcoming years.

CM Student Club activity: CM Club, Sigma Lambda Chi and USGC Student Chapter

The CM club ran a spring and fall lecture series, managed elections for next year’s officers, and helped select next year’s competition teams. Club officers spent significant amount of time establishing a process for the selection of competition teams. CM Club facilitated a total of six (6) guest speakers in addition to two (2) workshops structured to train competition team members as well as any other interested students. The complete CM club report can be found at Tab G.

SLC continued to work on their efforts to reconnect with past SLC members and work with the program to create a more complete and active alumni database. One of the SLC members traveled to Texas for the ASC Conference where she attended the SLC International Office meeting. See Tab H for the SLC report.

This year’s USGBC group was more active compared to the previous year. Major accomplishments included four students traveling to Green Build Expo in Washington, DC and the receipt of funding to send 4 more students in AY 15-16 to the Green Building Expo again. Dr. Emmer volunteered to serve as group’s academic advisor during AY 15-16. See Tab H for a complete report.

Capstone Project

Like last year, projects were run in a competition format; students were given a choice on project type; all projects were corporate sponsored and headed by alumni. Additionally, the competition winners were recognized at our fifth annual Student Alumni dinner at the Bristol Harbor Yacht club. Program alumni conducted senior exit surveys in parallel with capstone presentations.

Shawmut Design and Construction and Gilbane Building Company voted for this year's capstone project winners.

As was suggested last year, to provide more preparation time projects were introduced at the end of the fall semester. Other course requirements, for example research paper guidelines, were also announced allowing students to take advantage of the winter intercession period.

A complete report on the student Capstone Project experience can be found at Tab E.

Senior Exit Survey

Complete results of two senior exit surveys conducted by two members of our Construction Management Professional Advisory Board (CMPAB), Peter Holden and James Wrisley, can be found in Tab D.

Noted strengths once again included the faculty, strong student relationships, team competitions, internships, class size and the support of the Career Center, and most specifically Susan Caizzi.

Many ideas for improvement were mentioned. Students need better access to the software and facilities necessary to do their work. Students would like to see more choice when it comes to courses – more elective opportunities and courses to select from. Students also thought there could be more site visits that can be better integrated into the program. This year capstone also received some negative comments specifically regarding communication issues between the judges and the students.

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Associate Constructor Exam and Review Course

Six students from the graduation class decided to take the exam. 5 out of 6 students passed the exam, which is a great improvement, compared to the results of the previous year. The full AC Exam report is included at Tab F.

Other Topics

There were two career fairs this year. One in fall 2014 (October 8, 2014) and the other in spring 2015 (March 25, 2015). Twenty-two companies attended the fall 2014 career fair. Eighteen companies attended the spring 2015 career fair. We are continuously working alongside the Career Center to increase the number of companies as well as the students attending the career fairs.

Establishing the CM Program's social media accounts were finalized this year with active accounts on Facebook, LinkedIn, and Twitter. Our reach using these accounts grew substantially during 2014-2015.

Three committees representing the industry and alumni, students, and faculty worked together during 2014-2015 academic year through multiple meetings and tasks to reach and vote the new CM Program Mission and Objectives. See Tab J for further information.

CM Program Coordinator continued to work on the new program website with help from other faculty as well as the marketing and IT department at RWU. The new site is scheduled to launch by spring 2016.

Bill Thumm, Hensel Phelps Construction Company, continues as the chair of our CMPAB. This year the CMPAB presented a fifth scholarship, conducted mock interviews, participated in senior exit surveys, supported student internship and externships, organized the Alumni and Senior banquet and supported student guest lecture and laboratory activities. Our CMPAB endowed scholarship continues to grow and has been funded to a level where two scholarships may be provided. Program enrollment continues to be a challenge. CMPAB as well as the program faculty and administration

continue to work on this challenge. Planned actions to meet this challenge include strengthening our alumni database, improving our program web site and reaching out to targeted high schools. These actions will be taken with the support of Alumni, Admissions, and our CMPAB. This year, the CMPAB started to request specific data points from the program to put together an informative RWU performance dashboard that can help them identify strengths and concerns. The dashboard as of 2014-2015 is provided in Tab K. This table will be updated and included in the upcoming years' assessments.

Appendix A: Revised Program Outcomes and Metrics

The following pages reflect the adjusted outcomes based on the newly adopted ACCE student learning outcomes that will be used to assess the CM program starting in Academic Year 2015-2016.

Outcome 1: Create written communications appropriate to the construction discipline.			
Metrics Associated with Outcome	**Where Measured** (*Direct Assessment)	**Met**	**Comments**
1. 100% of Construction students successfully complete at least two writing courses	Transcript*		
2. All graduating seniors report that they are proficient in creating written communications appropriate to the construction discipline. Proficiency is defined as a mean and median score of 4 or above on a 5-point scale where 5 means proficiency achieved and 1 means proficiency not achieved.	Student Exit Survey		
3. At least 50% of all CM courses will require "creating written communications appropriate to the construction discipline"	Course Syllabi		
4. CNST 480 – Capstone course will adopt this outcome as an SLO, and its assessment report will list this SLO to be satisfactory based on at least one direct and one indirect assessment report.	Capstone Syllabus Capstone CAR* Capstone Jury Grades*		
5. All CM courses that carry this outcome as a CLO on their syllabi will report satisfactory in their course assessment reports.	Course Assessment Reports (CARs)		
6. 100% of employers who take a survey will report CM rising senior interns' writing communication to be either "Concise, factual, effective" or "Outstanding"	CM Intern Employer Survey		
7. Alumni rate their preparation for the workplace proficient regarding this outcome. Proficiency is defined as a mean and median score of 4 or above on a 5 point scale where 5 means proficiency	Alumni Survey (4-5 years out)		

Outcome 2: Create oral presentations appropriate to the construction discipline.			
Metrics Associated with Outcome	**Where Measured** (*Direct Assessment)	**Met**	**Comments**
1. At least 80% of all capstone mentors agree that graduating seniors possess ability to communicate effectively.	Capstone Jury Grades*		
2. 100% of employers who respond to the Internship Survey will report CM rising senior interns to be either "Clearly communicating ideas" or "Very articulate"	CM Intern Employer Survey		
3. 100% of seniors will have the opportunity in construction classes to make an oral presentation at least twice a semester during their senior year.	CARs		
4. 100% of all freshmen, sophomore and juniors will have the opportunity to make an oral presentation in a construction class at least 1 time a year.	CARs		
5. CNST 480 – Capstone course will adopt this outcome as an SLO, and its assessment report will list this SLO to be satisfactory based on at least one direct and one indirect assessment report.	Capstone Syllabus Capstone CAR* Capstone Jury Grades*		
6. All graduating seniors report that their RWU education has prepared them proficiently in communication skills for the workplace. Proficiency is defined as a mean and median score of 4 or above on a 5-point scale where 5 means proficiency achieved and 1 means proficiency not achieved.	Student Exit Survey		
7. Alumni rate their preparation for the workplace proficient regarding this outcome. Proficiency is defined as a mean and median score of 4 or above on a 5 point scale where 5 means proficiency	Alumni Survey (4 year out)		

Outcome 3: Create a construction project safety plan.			
Metrics Associated with Outcome	**Where Measured** (*Direct Assessment)	**Met**	**Comments**
1. 100% of construction students participate in a Capstone Project Class that involves a semester long industry-sponsored project that demonstrates their ability to create a construction project safety plan.	Transcripts Capstone CAR		
2. CNST 480 – Capstone course will adopt this outcome as an SLO, and its assessment report will list this SLO to be satisfactory based on at least one direct and one indirect assessment report.	Capstone Syllabus Capstone CAR* Capstone Jury Grades*		
3. CNST 445/445L will adopt this outcome as an SLO and report it to be satisfactory based on at least one direct and one indirect assessment.	CNST 445 CAR*		
4. All graduating seniors rate their preparation for the workplace proficient regarding this outcome. Proficiency is defined as a mean and median score of 4 or above on a 5 point scale where 5 means proficiency	Student Exit Survey		

Outcome 4: Create construction project cost estimates.			
Metrics Associated with Outcome	**Where Measured** (*Direct Assessment)	**Met**	**Comments**
1. 100% of construction students participate in a Capstone Project Class that involves a semester long industry-sponsored project that demonstrates their ability to create construction project cost estimates.	Transcripts Capstone CAR		
2. CNST 480 – Capstone course will adopt this outcome as an SLO, and its assessment report will list this SLO to be satisfactory based on at least one direct and one indirect assessment method.	Capstone Syllabus Capstone CAR* Capstone Jury Grades*		
4. CNST 321 will adopt this outcome as an SLO and report it to be satisfactory based on at least one direct and one indirect assessment.	CNST 321 CAR*		
5. 100% of employers who respond to the Internship Survey will report CM rising senior interns to be either “Moderately knowledgeable” or “Very knowledgeable” in estimating	CM Intern Employer Survey		
4. All graduating seniors rate their preparation for the workplace proficient regarding this outcome. Proficiency is defined as a mean and median score of 4 or above on a 5 point scale where 5 means proficiency	Student Exit Survey		

Outcome 5: Create construction project schedules.			
Metrics Associated with Outcome	**Where Measured** (*Direct Assessment)	**Met**	**Comments**
1. 100% of construction students participate in a Capstone Project Class that involves a semester long industry-sponsored project that demonstrates their ability to create construction project schedules.	Transcripts Capstone CAR		
2. CNST 480 – Capstone course will adopt this outcome as an SLO, and its assessment report will list this SLO to be satisfactory based on at least one direct and one indirect assessment method.	Capstone Syllabus Capstone CAR* Capstone Jury Grades*		
4. CNST 450 will adopt this outcome as an SLO and report it to be satisfactory based on at least one direct and one indirect assessment.	CNST 450 CAR*		
5. 100% of employers who respond to the Internship Survey will report CM rising senior interns to be either “Moderately knowledgeable” or “Very knowledgeable” in scheduling	CM Intern Employer Survey		
4. All graduating seniors rate their preparation for the workplace proficient regarding this outcome. Proficiency is defined as a mean and median score of 4 or above on a 5 point scale where 5 means proficiency	Student Exit Survey		

Outcome 6: Analyze professional decisions based on ethical principles.			
Metrics Associated with Outcome	**Where Measured**	**Met**	**Comments**
1. All students will develop and present an ethics case that focuses on professional and ethical responsibility.	Course Syllabi CARs		
2. CNST 480 – Capstone course will adopt this outcome as an SLO, and its assessment report will list this SLO to be satisfactory based on at least one direct and one indirect assessment method.	Capstone Syllabus Capstone CAR Capstone Jury Survey		
3. At least 25% of all construction management classes will include an ethics related course learning outcome in the syllabus. All CLOs to be assessed using at least one direct and/or indirect assessment in the course assessment reports.	CARs		
4. CNST 445/445L will adopt this outcome as an SLO and report it to be satisfactory based on at least one direct and one indirect assessment.	CNST 445 CAR		
5. All graduating seniors rate their preparation for the workplace proficient regarding this outcome. Proficiency is defined as a mean and median score of 4 or above on a 5 point scale where 5 means proficiency	Senior Exit Survey		
6. Alumni rate their preparation for the workplace proficient regarding this outcome. Proficiency is defined as a mean and median score of 4 or above on a 5 point scale where 5 means proficiency	Alumni Survey (4 years out)		

Outcome 7: Analyze construction documents for planning and management of construction processes.			
Metrics Associated with Outcome	**Where Measured**	**Met**	**Comments**
1. At least 50% of all construction management classes will include a course learning outcome related to this PLO in the syllabus. All CLOs to be assessed using at least one direct and/or indirect assessment in the course assessment reports.	CARs		
2. CNST 480 – Capstone course will adopt this outcome as an SLO and report it to be satisfactory based on at least one direct and one indirect assessment.	Capstone Syllabus Capstone CAR Capstone Jury Survey		
3. All graduating seniors rate their preparation for the workplace proficient regarding this outcome. Proficiency is defined as a mean and median score of 4 or above on a 5 point scale where 5 means proficiency	Senior Exit Survey		

Outcome 8: Analyze methods, materials, and equipment used to construct projects.			
Metrics Associated with Outcome	**Where Measured**	**Met**	**Comments**
1. At least 50% of all construction management classes will include a course learning outcome related to this PLO in the syllabus. All CLOs to be assessed using at least one direct and/or indirect assessment in the course assessment reports.	CARs		
2. CNST 480 – Capstone course will adopt this outcome as an SLO and report it to be satisfactory based on at least one direct and one indirect assessment.	Capstone Syllabus Capstone CAR Capstone Jury Survey		
3. All graduating seniors rate their preparation for the workplace proficient regarding this outcome. Proficiency is defined as a mean and median score of 4 or above on a 5 point scale where 5 means proficiency	Senior Exit Survey		
4. 100% of employers who respond to the Internship Survey will report CM rising senior interns to be either “In tune with the requirements” or “Outstanding” in technical skills.	CM Intern Employer Survey		

Outcome 9: Apply construction management skills as a member of a multi-disciplinary team.			
Metrics Associated with Outcome	**Where Measured**	**Met**	**Comments**
1. CNST 445 will adopt this outcome as an SLO, and its assessment report will list this SLO to be satisfactory based on at least one direct and one indirect assessment method.	CNST 445 CAR		
2. At least three student-led teams will participate in a construction related student competition within the assessed academic year.	Student Competition info from the CM Club report		
3. All graduating seniors rate their preparation for the workplace proficient regarding this outcome. Proficiency is defined as a mean and median score of 4 or above on a 5 point scale where 5 means proficiency	Senior Exit Survey		
4. 100% of graduating seniors report that they had at least one opportunity to work with a multi-disciplinary team during at least one construction course.	Senior Exit Survey		
5. 100% of employers who respond to the Internship Survey will report CM rising senior interns to be either “Gets along with others”, “Works well with others” or “Exceptionally well accepted” in relations with others.	CM Intern Employer Survey		
6. At least 10% of all Construction Management seniors will participate in a student team competition where their performance will be externally judged and assessed.	Student Competition info from the CM Club report		
7. 100% of work eligible CM students will hold at least one construction related employment, internship or co-op during their studies at RWU, prior to graduation.	Student Internship Survey Senior Exit Survey		
8. Alumni rate their preparation for the workplace proficient regarding this outcome. Proficiency is defined as a mean and median score of 4 or above on a 5 point scale where 5 means proficiency	Alumni Survey (4 years out)		

Outcome 10: Apply electronic-based technology to manage the construction process.			
Metrics Associated with Outcome	**Where Measured**	**Met**	**Comments**
1. All graduating seniors rate their preparation for the workplace proficient regarding this outcome. Proficiency is defined as a mean and median score of 4 or above on a 5 point scale where 5 means proficiency	Senior Exit Survey		
2. 100% of employers who respond to the Internship Survey will report CM rising senior interns to be either “Extremely” or “Moderately” proficient regarding software program proficiency	CM Intern Employer Survey		
3. At least 50% of all construction management classes will include a course learning outcome related to this PLO in the syllabus. All CLOs to be assessed using at least one direct and/or indirect assessment in the course assessment reports.	CARs		
4. 100% of CM students will complete a computer applications course.	Transcripts		
5. All estimating and scheduling courses will include at least one electronic based technology related SLO in the course syllabus. SLO will be assessed by at least one direct and one indirect assessment method.	CNST 260 CAR CNST 321 CAR CNST 450 CAR		
6. 100% of students graduating will report at minimum “intermediate” skills in at least one software program related to each of the following categories: - Drafting - Spreadsheet - Estimating - Scheduling - Project Management - 3D Modeling/Simulation	Senior Exit Survey		

Outcome 11: Apply basic surveying techniques for construction layout and control.			
Metrics Associated with Outcome:	**Where Measured**	**Met**	**Comments**
1. All graduating seniors rate their preparation for the workplace proficient regarding this outcome. Proficiency is defined as a mean and median score of 4 or above on a 5 point scale where 5 means proficiency	Senior Exit Survey		
2. At least three CM courses will address this outcome at some level and the courses will assess the associated outcome with direct and/or indirect assessment methods.	CARs		
3. CNST 302 will adopt this outcome as an SLO, and its assessment report will list this SLO to be satisfactory based on at least one direct and one indirect assessment method.	CNST 302 CAR		

Outcome 12: Understand different methods of project delivery and the roles and responsibilities of all constituencies involved in the design and construction process.			
Metrics Associated with Outcome	**Where Measured**	**Met**	**Comments**
1. All graduating seniors rate their preparation for the workplace proficient regarding this outcome. Proficiency is defined as a mean and median score of 4 or above on a 5 point scale where 5 means proficiency	Senior Exit Survey		
2. At least 25% of all construction management classes will include a course learning outcome related to this PLO in the syllabus. All CLOs to be assessed using at least one direct and/or indirect assessment in the course assessment reports.	CARs		
3. At least 10% of all Construction Management seniors will participate in a competition where they will be exposed to differences among teams (DB, CM, and HH) and their proposals due to the specific delivery methods used in each category.	Student Competition info from the CM Club report		
4. 100% of CM students report to have participated in at least one interdisciplinary workshop in collaboration with a non-CM program such as architecture, engineering, business, etc. prior to graduation.	Student Exit Survey		
5. CNST 445 will adopt this outcome as an SLO, and its assessment report will list this SLO to be satisfactory based on at least one direct and one indirect assessment method.	CNST 445 CAR		

Outcome 13: Understand construction risk management.			
Metrics Associated with Outcome	**Where Measured**	**Met**	**Comments**
1. All graduating seniors rate their preparation for the workplace proficient regarding this outcome. Proficiency is defined as a mean and median score of 4 or above on a 5 point scale where 5 means proficiency	Senior Exit Survey		
2. At least 25% of all construction management classes will include a course learning outcome related to this PLO in the syllabus. All CLOs to be assessed using at least one direct and/or indirect assessment in the course assessment reports.	CARs		
3. CNST 480 will adopt this outcome as an SLO, and its assessment report will list this SLO to be satisfactory based on at least one direct and one indirect assessment method.	CNST 480 CAR		

Outcome 14: Understand construction accounting and cost control.			
Metrics Associated with Outcome	**Where Measured**	**Met**	**Comments**
1. All graduating seniors rate their preparation for the workplace proficient regarding this outcome. Proficiency is defined as a mean and median score of 4 or above on a 5 point scale where 5 means proficiency	Senior Exit Survey		
2. At least three construction management classes will include a course learning outcome related to this PLO in the syllabus. All CLOs to be assessed using at least one direct and/or indirect assessment in the course assessment reports.	CARs		
3. All CM students will take at least one course in financial accounting from the business school.	Transcripts		
4. CNST 475 will adopt this outcome as an SLO, and its assessment report will list this SLO to be satisfactory based on at least one direct and one indirect assessment method.	CNST 475 CAR		

Outcome 15: Understand construction quality assurance and control.			
Metrics Associated with Outcome	**Where Measured**	**Met**	**Comments**
1. All graduating seniors rate their preparation for the workplace proficient regarding this outcome. Proficiency is defined as a mean and median score of 4 or above on a 5 point scale where 5 means proficiency	Senior Exit Survey		
2. At least 25% of all construction management classes will include a course learning outcome related to this PLO in the syllabus. All CLOs to be assessed using at least one direct and/or indirect assessment in the course assessment reports.	CARs		
3. 100% of CM students will enroll in a capstone project that requires teams to develop quality assurance and control plans as a part of their final deliverable.	Capstone CAR		
2. CNST 480 – Capstone course will adopt this outcome as an SLO and report it to be satisfactory based on at least one direct and one indirect assessment.	Capstone Syllabus Capstone CAR Capstone Jury Survey		

Outcome 16: Understand construction project control processes.			
Metrics Associated with Outcome	**Where Measured**	**Met**	**Comments**
1. CNST 475 will adopt this outcome as an SLO, and its assessment report will list this SLO to be satisfactory based on at least one direct and one indirect assessment method.	CNST 475 CAR		
2. All graduating seniors rate their preparation for the workplace proficient regarding this outcome. Proficiency is defined as a mean and median score of 4 or above on a 5 point scale where 5 means proficiency	Senior Exit Survey		
3. At least three construction management classes will include a course learning outcome related to this PLO in the syllabus. All CLOs to be assessed using at least one direct and/or indirect assessment in the course assessment reports.	CARs		

Outcome 17: Understand the legal implications of contract, common, and regulatory law to manage a construction project.			
Metrics Associated with Outcome	**Where Measured**	**Met**	**Comments**
1. Graduating seniors report that they feel they have achieved this outcome. Achievement is defined as a mean & median score of 4 or above on a 5 point scale where 5 means proficiency achieved and 1 means not.	Senior Exit Survey		
2. At least 25% of all construction management classes will include a course learning outcome related to this PLO in the syllabus. All CLOs to be assessed using at least one direct and/or indirect assessment in the course assessment reports.	CARs		
3. 100% of all CM students will successfully complete at least one legal elective course.	Transcripts		
4. CNST 445 will adopt this outcome as an SLO, and its assessment report will list this SLO to be satisfactory based on at least one direct and one indirect assessment method.	CNST 445 CAR		

Outcome 18: Understand the basic principles of sustainable construction.			
Metrics Associated with Outcome	**Where Measured**	**Met**	**Comments**
1. Graduating seniors report that they feel they have achieved this outcome. Achievement is defined as a mean & median score of 4 or above on a 5 point scale where 5 means proficiency achieved and 1 means not.	Senior Exit Survey		
2. At least three construction management classes will include a course learning outcome related to this PLO in the syllabus. All CLOs to be assessed using at least one direct and/or indirect assessment in the course assessment reports.	CARs		
3. At least 5% of graduating seniors will report to have been actively involved with the USGBC Student Group on campus.	Senior Exit Survey		
4. RWU USGBC Student Group will sponsor at least one educational activity focusing on sustainable construction in the assessed AY that is open to all CM students with no restrictions on eligibility to attend.	RWU USGBC Student Group Report		
5. At least 10% of graduating seniors will report to have attended to a minimum of one RWU USGBC Student Group activity during their studies at RWU.	Senior Exit Survey		
4. CNST 540 will adopt this outcome as an SLO, and its assessment report will list this SLO to be satisfactory based on at least one direct and one indirect assessment method.	CNST 445 CAR		
7. At least one course focusing on “Sustainable Construction” is offered during junior or senior year as a required or elective construction course.	Academic Catalog		

Outcome 19: Understand the basic principles of structural behavior.			
Metrics Associated with Outcome	**Where Measured**	**Met**	**Comments**
1. Graduating seniors report that they feel they have achieved this outcome. Achievement is defined as a mean & median score of 4 or above on a 5 point scale where 5 means proficiency achieved and 1 means not.	Senior Exit Survey		
2. At least three construction management classes will include a course learning outcome related to this PLO in the syllabus. All CLOs to be assessed using at least one direct and/or indirect assessment in the course assessment reports.	CARs		
3. CNST 304 adopt this outcome as an SLO, and its assessment report will list this SLO to be satisfactory based on at least one direct and one indirect assessment method.	CNST 304 CAR		

Outcome 20: Understand the basic principles of mechanical, electrical and piping systems.			
Metrics Associated with Outcome	**Where Measured**	**Met**	**Comments**
1. Graduating seniors report that they feel they have achieved this outcome. Achievement is defined as a mean & median score of 4 or above on a 5 point scale where 5 means proficiency achieved and 1 means not.	Senior Exit Survey		
2. At least three construction management classes will include a course learning outcome related to this PLO in the syllabus. All CLOs to be assessed using at least one direct and/or indirect assessment in the course assessment reports.	CARs		
3. CNST 455 adopt this outcome as an SLO, and its assessment report will list this SLO to be satisfactory based on at least one direct and one indirect assessment method.	CNST 455 CAR		