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 program at Roger Williams University. This annual report covers the academic year beginning in August 2010 and ending in July 2011 (AY 10-11). Its focus is on the academic assessment through the year. Based on a review of the course reports as well as surveys and discussion with students and recent graduates, it is evident that the state of the program is strong.

The program faculty met on May 18, 2011 to review the AY 10-11 academic year and to discuss changes for next year. At this meeting we 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, Capstone project, Senior exit surveys, and the AC exam. The meeting agenda, and the reports made are attached to this assessment report.

Overall this was a strong year for the Construction Management program. Some of the hi-lights of the year are as follows:

- During the spring 2011 semester the program hosted an ACCE reaccreditation visiting team. The visiting team's provided a very favorable report and in July at the ACCE annual meeting and a full six-year reaccreditation was approved.

- The Shawmut Design & Construction (SDC) Construction Management Project Center (formerly SE-125) opened in the fall.

- Total student population declined in 2010 enrollment from 156 CM majors in October 2009 to 138 students in October 2010. Freshman enrollment is the same as last year.

- It was another good year for our three student competition teams. Two of our three teams placed with our Design Build winning 3rd and our Heavy Highway teams winning 2nd at the ASC Region 1 competition. Our team's activities were financially supported by the Rhode Island AGC and the Construction Industries of Rhode Island.

- The CM Professional Advisory Board awarded its first endowed scholarship. Travis Lescarbeau was the first recipient. The CMPAB Alumni Committee also hosted the first annual Alumni and Senior Dinner at the Bristol Yacht Club.

- Dr. Michael Emmer joined the faculty for the start of the 2010-2011 academic year.

- The Masters of Science in Construction Management began in the fall with an entering class of 12 students.

1. Introduction

The Construction Management program was reaccredited by the ACCE in spring 2005.The First Year Interim Report was submitted in AY 2005-2006 and the Third Year Interim Report was submitted in AY 2007-2008. One published ACCE concern was outcomes assessment. 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 for AY 2005-2006, AY 2006-2007, AY 2007-2008, AY 2008-2009, and 2009-2010. This report will address the 2010-2011 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, and the Associate Constructor exam was continued 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 18th 2011 to discuss the above reports and to conduct this annual assessment. The agenda for this assessment meeting is included at Tab D. At this meeting program performance for AY 2010-2011 was assessed and adjustments in outcomes and metrics were made for coming year. Faculty also discussed ways to strengthen the Construction Management Student Club, the Internship and Externship programs, CM Capstone Project and the Associate Constructor exam. All of the above topics are addressed further within the body of this report.

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 E), Senior Capstone Project Jury Report (Tab F), Associate Constructor Exam Report including exam performance (Tab G), CM Club report (Tab H), and Internship Report (Tab I). Informal data included informal conversations between faculty and faculty, 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 objectively and subjectively. For the third time, the CM advisory board through the academic subcommittee coordinated our senior exit surveys. Three program alumni formed the panel, which met with all but one (family emergency) graduating seniors. Seniors also filled out an objective survey. Both the written survey results and a report from the alumni panel can be found at Tab E.

Following the recommendation of last year's assessment process this year's three capstone projects were held in a competition format and with each a different project type. The projects were corporate sponsored and a SECCM alumnus coordinated each project. The capstone project winners were announced at our first annual CM Alumni banquet. Tab F provides additional detail on this successful event.

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. 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. Program faculty meet with the board each semester. (Tab J includes copies of our meeting minutes)

Within each course assessment report students are provided the opportunity to evaluate their accomplishment of course objectives. This information is used by instructors to modify courses from semester to semester. Faculty provide formal course reports after each semester and a summary of each course is reviewed and discussed with other faculty from the program. This discussion facilitates adjustment in course coverage and adjustments in the overall program.

Adjustments for Next Year

It is our intention to continue with this year's successful CM Alumni banquet and next year ask attending alumni to complete an Alumni survey. Our plan is to survey alumni each year at this event.

Dr. Brunnhoeffer, SECCM Internship coordinator, with the help of the Career Center has begun the process of surveying internship employers. Employers visit campus to conduct on campus interviews and to attend Career fair events. Survey results will be included next year in Dr. Brunnhoeffer's Internship report.

3. Program Assessment

The program educational objectives were first presented in that format for the 2007-2008 academic year. These objectives are shown in the table below.

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 conducted over the summer of 2009. Results as previously noted were not great. 112 interview forms were sent out to the 2003-2008 graduate classes and only 8 were returned. In the future the manner in which the survey is delivered and the questions and the form in which they are asked will be adjusted. No Alumni Survey was completed in 2010. The 2009 survey results and faculty conversations with employers and graduates have been used to assess graduate success in meeting our stated program objectives.

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.

Graduates display a high level of success in all of the in-house management training programs the large, more established, construction companies conduct. Also, quite a few of our graduates were promoted ahead of peers to advanced leadership positions. Even with difficult economic times, corporate recruiting was strong at fall and spring career fairs. Our senior exit survey reported 46% of our seniors having accepted permanent employment. One company representative noted RWU retention as the highest of any school they hire from. In examining the 2009 Alumni Survey results the areas of oral and written communication, interpersonal skills, multidisciplinary teamwork, ethics and professional behavior, estimating, scheduling, leadership, problem solving, and research skills were scored the highest. (Mean & Median 4 and above on a scale of 1-5)

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.

Three of the eight alumni who responded to our survey are currently pursuing an advanced degree or a second bachelor's degree. Graduate employers commented that our graduates display the ability to grasp new concepts and technologies well and also show a strong interest in teaching others. Graduates embrace learning and take regular advantage of in house training offered by their employers. Graduates show the ability to be cross trained to various industry roles. All eight survey respondents are in the process of pursuing or have received a special license or certification. Two CM Alumni have enrolled in our new CM Master's program which began this fall

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.

Seven out of our eight survey respondents are members of professional associations. Alumni involvement on our CM Advisory Board and as members of our capstone review panel has grown. An alumni subcommittee has been formed by the CM Advisory Board and an effort is being made to form a sub-group in the Boston area. The first ever CM Alumni banquet was held in May. More than 100 alumni, students and faculty participated in the event held at the Bristol Yacht Club.

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.

Tom Comella, Chair of the CM advisory board and an RWU alumnus was honored at this event.

Employers report that our graduates have demonstrated a willingness to become involved in community and professional organizations. Graduates have joined Habitat for Humanity, ACE Mentoring, United Way and Rebuilding MA to name a few. Our graduates have become active in AGC's young constructor program in MA, RI and CT. Graduates have also displayed a willingness to mentor others both outside and within their companies.

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 Construction Management Program Outcomes

● = Weak Relationship

● = Moderate Relationship

● = Strong Relationship

a – i Outcomes	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	●	●	●
b. effective research and problem solving skills applied to typical Construction Management tasks	●	●	●
c. an ability to plan, organize and control a construction project	●	●	●
d. an ability to lead and/or function as a member of a team	●	●	●
e. an understanding of professional and ethical responsibility	●	●	●
f. an ability to communicate effectively	●	●	●
g. the broad education necessary to understand the impact of construction in a global, economic, environmental, and societal context	●	●	●
h. a recognition of the need for, and an ability to engage in lifelong learning	●	●	●
i. a knowledge of contemporary issues	●	●	●

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 as well as the feedback received from the graduates themselves, the program faculty members believe that the Program Educational Objectives are being satisfied. A better constructed and administered alumni survey and an employer survey need to be conducted in the future.

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 10-11 academic year. However, as each outcome was evaluated, program faculty examine the outcomes and metrics and made adjustments to better evaluate program performance. The newly defined outcomes and metrics are located in attachment A and will be utilized for the AY 11-12 academic year.

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	No	RWU 55.2% National 61%
2. For each required construction course with a prerequisite in mathematics, science or engineering, at least 75% of the students who have C or better in the prerequisite course pass the course on the first attempt.	Transcript Review	Yes	Program Faculty find this metric of minimal value - will be removed for next year.
3. 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	Yes	Survey mean = 4.29
4. Faculty report adequate application of mathematics in construction coursework.	Course Assessment Report	Yes	
5. 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	N/A	Neither survey was conducted this year.

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	
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	
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	Yes	Mean = 4.29, though the survey question will be worded more specifically next year.
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	

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	
2. Employment 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 Interview Survey	N/A	Faculty currently working with the Career Center to attain better employer interview feedback.
3. Employers 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	N/A	

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	Yes	
2. 100% of all Construction students will participate in the university CORE sequence and University Senior Integrative Experience.	Transcripts	Yes	
3. At least 50% of construction courses will give students the opportunity to work on collaborative team projects.	Course Binders Course Assessment Report	Yes	
4. At least two student-led teams will participate in the Associated Schools of Construction Region 1 student competition	Student Competitions	Yes	
5. At least 75% of 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.	Senior Exit Survey	No	Only 46% per this year's senior exit survey.

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	67% - Program faculty will be moving to make sitting for the exam a graduation requirement starting with our 2012 entering class.
2. All students will develop and present a case that focuses on professional and ethical responsibility.	Course Binders	Yes	
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	Yes	

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 the ability to communicate effectively.	Capstone Jury Graduate employer survey	Yes	Capstone Jury only.
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	
3. 100% of all freshmen will have the opportunity to make an oral presentation in a construction class at least 2 times per year.	Course Binders Course Assessment Report	Yes	
4. 100% of graduates will produce an acceptable senior capstone oral report as evaluated by external and internal review.	Capstone Jury	Yes	
5. At least 90% of 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	

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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	
2. At least 25% of construction courses address this outcome.	Course Assessment Report Course Binders	Yes	
3. At least 1 guest speaker per semester will address the above outcome.	CM Club Report	Yes	
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	Senior exit survey mean = 3.78

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	46%
2. At least 50% of CM students will be active members in the CM club.	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	

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 Senior multidisciplinary Core course	Course Binders	Yes	
2. At least 25% of construction courses will address this outcome.	Course Binders Course Assessment Report	Yes	
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	Exit survey score = 3.80
4. All (100%) of construction students will be exposed to contemporary issues through the Senior Seminar class.	Course Binders	Yes	
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	

4. Assessment of Previously Implemented Program Changes

The CM Masters program initiated during the 2007-2008 academic year deserves comment.

Curriculum change AY0708-1 launched a Master of Science in Construction Management (MS in CM) program scheduled for the start with the fall 2009 semester. The program is designed to incorporate both on-line, classroom, and resident instruction. The program will be two years in length, 36 credits, with the students operating as a cohort. Unfortunately, current enrollment was not adequate to start the program in 2009. Due to tough economic times, corporate support did not materialized as planned, so starting in the fall 2010 the program temporarily moved away from the "corporate sponsored," cohort model. Entrance requirements were also changed allowing students to enter the program with less than 3 years of work experience. The program officially started with a fall 2010 class of 12 students. Projected enrollment for fall 2011 is down. The program faculty members are very concerned and feel that much more work needs to be done by admissions to market the program.

5. Discussion of Recommended Program Changes

As mentioned in Section 2 a number of formal reports were made this year which were reviewed and discussed be the faculty:

Internship Program

One of the disappointing statistics attained from this year's senior exit survey was that only 46% of our graduating seniors reported holding an internship position while at RWU. Of those that had an internship, 95% found it valuable. Both the faculty and our CMPAB believe that every student should have had at least one internship experience before graduating.

(One point to verify for next year was whether the students mistakenly assumed that the internship must be an "official" internship to count.)

Everyone agreed to push the importance of doing an internship with the students. This will begin in the freshmen year with the continued requirement for each student to have an "approved" resume posted on "Hawks Hunt" by the end of the fall semester. This will continue to be a graded requirement.

The program, through the internship coordinator, will work with the Career Center to identify additional internship positions, particularly focusing on "2nd tier, subcontractor" positions. Internship employers will also be "coached" as to how to best utilize our students. Likewise, students through the advising process will be encouraged and "coached" on how to take advantage of the internship experience.

More and more employers are using the internship experience as the first step in the hiring process, so it critical that every student does all they can to secure this important experience. See Tab I for the program Internship report.

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

See Dr.Celik's report and the Club President reports for the fall and spring semester under Tab H. His report outlines both the activities and plans for the CM Club, Sigma Lambda Chi (SLC), and the RWU USGBC Student Group.

The CM club ran a spring and fall lecture series, managed elections for next year's officers, set up next year's competition teams, held a field trip and ran a fundraising activity. All club members were very supportive of fall and spring open house activities. Looking ahead to next year, the club would like to expand the breadth of speakers to include subcontractors, public officials, and CM field staff. The CM club also supported this year's three competition teams which won two awards. A copy of the Student Competition press release can be found at Tab H.

SLC had a good year, participating in a number of volunteer activities and overseeing the management of the newly formed USGBC Student Group. They received an award for their efforts at the ASC International Conference. Managing the work of both SLC and USGBC was a lot. In response a new executive committee was formed to manage USGBC activities.

USGBC continues to be a very popular and active Student Group. The group created and ran a LEED-GA workshop that 40 students and 3 industry professionals completed. The group received University funding and 4 students traveled to Chicago to attend the Green Building Expo. The group plans to hold a fall Sustainability focused industry/student panel discussion next fall and begin making plans for participation in the 2013 Solar Decathlon competition.

Starting next year Professor Branca will advise the CM Club and Dr. Celik will advise SLC and USGBC.

Capstone Project

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

A number of changes were made this year in response to feedback received during last year's assessment cycle. 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 first annual Student Alumni dinner at the Bristol Harbor Yacht club.

As last year, program alumni conducted senior exit surveys in parallel with capstone presentations. Students who passed the AC exam received a 5% course bonus.

Feedback from students, faculty and industry was very favorable with the intention to repeat this approach next year. Many students requested better access to CM specific software both in the Project Center and after hours.

Senior Exit Survey

Referencing Tab E, items1, 2 and 3 please find the results of our objective survey and summary and our Construction Management Professional Advisory Board (CMPAB) subjective senior exit surveys. Exit results are mostly favorable, but there is ample room for improvement.

Facilities and Technology: As one CMPAB member put it, "CM courses should be taught to students as they will practice in the workplace." Students should be working collaboratively, use professional grade software, and work with mobile communication/computational devices. 86% of our seniors support the initiation of a standardized laptop program to enhance this initiative.

Internships and Externships: Our graduating seniors did not take full advantage of these programs. (46 % participation rate) As previously mentioned these programs need to be pushed.

Electives and Collaborative Opportunities: The CM program needs to create and look for additional opportunities for students to work with students from other majors: Architecture and Engineering, and take elective courses. Courses in BIM, Heavy Highway and Sustainability were all mentioned.

Associate Constructor Exam and Review Course

The program faculty felt that our previously implemented changes worked well. Exam participation was promoted by the faculty. Students who did sit for and passed the exam received a 5% bonus in CNST 480 and their exam fee was reimbursed.

Class results were mediocre at best – 66.7% of eligible seniors took the exam and of those that took it, 58% passed. (The National pass rate was 62%) The full AC Exam report is included at Tab G.

Some faculty members interpret the poor results as one of apathy on the part of the students as well as our supporting employers. Others, however, see the exam as an accurate reflection of the base knowledge our graduates should have mastered at the time of graduation. It is our intention to continue to push the exam, provide a 5% bonus in CNST 480 for those that pass, and reimbursements their exam cost and, starting next year penalize those who do not pass the exam 5% in CNST 480.

Other Topics

The formal opening of the new Shawmut Design and Construction Project Center and the award of our first CMPAB endowed scholarship were major accomplishments. A second scholarship award will occur this fall. Improved mobile communication/computing will be necessary to fully utilize the Shawmut Project Center as the faculty desire.

Plans are underway to hold another Senior/Alumni spring event. The CMPAB Alumni committee would also like to add a fall alumni event – possibly a golf tournament.

Program enrollment at both the undergraduate and graduate levels needs to be improved.

Appendix A: Revised Program Outcomes and Metrics

The following pages reflect the adjusted outcomes that will be used to assess the CM program starting in Academic Year 2011-2012. Indicated on each page is a brief note of the changes made.

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		
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		
3. Faculty report adequate application of mathematics in construction coursework.	Course Assessment Report		
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		

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		
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		
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		.
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		

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		
2. Employment 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 Interview Survey		
3. Employers 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		

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		
2. 100% of all Construction students will participate in the university CORE sequence and University Senior Integrative Experience.	Transcripts		
3. At least 50% of construction courses will give students the opportunity to work on collaborative team projects.	Course Binders Course Assessment Report		
4. At least two student-led teams will participate in the Associated Schools of Construction Region 1 student competition	Student Competitions		
5. At least 75% of 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.	Senior Exit Survey		

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		
2. All students will develop and present a case that focuses on professional and ethical responsibility.	Course Binders		
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		

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 the ability to communicate effectively.	Capstone Jury Graduate employer survey		
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		
3. 100% of all freshmen will have the opportunity to make an oral presentation in a construction class at least 2 times per year.	Course Binders Course Assessment Report		
4. 100% of graduates will produce an acceptable senior capstone oral report as evaluated by external and internal review.	Capstone Jury		
5. At least 90% of 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		

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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		
2. At least 25% of construction courses address this outcome.	Course Assessment Report Course Binders		
3. At least 1 guest speaker per semester will address the above outcome.	CM Club Report		
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		

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		
2. At least 50% of CM students will be active members in the CM club.	CM Club Report		
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		
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		

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 Senior multidisciplinary Core course	Course Binders		
2. At least 25% of construction courses will address this outcome.	Course Binders Course Assessment Report		
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		
4. All (100%) of construction students will be exposed to contemporary issues in their senior year.	Course Binders		
5. All (100%) of construction students will participate in the Feinstein Service Learning Requirement of at least 5 hours in the surrounding community.	Transcripts		