

**Central Washington University
Assessment of Student Learning
Construction Management Program
Engineering Technologies, Safety and Construction Department
College of Education and Professional Studies
Fall 2012**

Introduction: This report is an overview of the student learning outcome assessment process. Included are the instruments utilized, data collected and the resulting changes that took place during the time period from March 2011 to June 2012. Discussion of the significance of the results is also included.

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1. Program Mission and Goals

The primary mission for the Construction Management Program is to provide the highest possible quality general construction education to undergraduate students who are preparing for careers in the construction industry.

The secondary mission is to maintain ongoing contact with the construction industry and to provide support for this industry.

The Major Program Goals Are:

- Goal A: Improve the quality of instruction within the program
- Goal B: Provide support for the construction industry
- Goal C: Measurably improve the overall quality of the construction program
- Goal D: Support professional development for program faculty
- Goal E: Improve and expand the heavy/civil construction option within the program

2. Student Learning Outcomes and Assessment

Twenty eight specific student learning outcomes have been divided into **three primary categories**. These three primary student learning outcomes and a summary of the corresponding assessment methods are as follows:

Outcome	
1. Cognitive/Knowledge/Knowing	Assessment Method, When Assessed, Students Assessed
A. Graduates shall be able to identify and describe the legal, economic and social aspects of the construction industry, the construction process and construction contract systems.	Specific instruments in courses: CMGT 444, CMGT 445(fall quarter, seniors), 455 and CMGT 456. (winter, seniors).
B. Graduates shall demonstrate analytical skills and knowledge in the area of structures, construction finance, cost analysis, construction safety, construction materials, construction methods and building systems.	Specific instrument in courses: CMGT 485 (spring, seniors), IET 312 (winter, spring, juniors), CMGT 265 (fall, winter, sophomores), CMGT 460, 461 (spring, seniors), CMGT 320 (spring, juniors and seniors), CMGT 442 (winter, juniors and seniors), CMGT 450 (fall, seniors), CMGT 455, 456 (winter, seniors) and SHM 323 (fall, juniors). Also: AIC Exam section scores and employer survey responses (not every year, senior students and graduates).
2. Affective/Attitudes/Feelings and Values	Assessment Method
A. Graduates shall obtain employment as construction professionals in entry-level positions. Graduates shall also possess the skills, knowledge, attitude and behavior to advance within the industry.	Ethics assignments in CMGT 265 (fall, sophomores), CMGT 444 and CMGT 445 (fall, seniors). Also specific assignment in CMGT 265 (fall, sophomores) and lab scores in CMGT 267 (spring, sophomores). Also, employer survey (not every year) graduating senior survey, exit interview (spring, seniors).

3. Skills/Doing	Assessment Method
A. Graduates shall be able to estimate, plan and schedule a small commercial/residential or heavy/civil project using microcomputers and appropriate software.	Estimating final project (spring, juniors), AIC exam section on scheduling (spring, seniors), CMGT 447 final project (fall, seniors). Also, employer survey (not every year).
B. Graduates shall be able to demonstrate basic building and material testing skills and the proper use of construction software.	CMGT 267 (spring, sophomores), CMGT 450 (fall, seniors), CMGT 460 and CMGT 461 lab scores (spring, seniors). Employer survey (not every year).
C. Students graduating from the program shall be able to communicate clearly and effectively, orally, graphically and in writing.	Presentations in various courses, IET 161 final project (winter, freshmen and sophomores), CMGT 265 sketching exercises (fall, sophomores), CMGT 346 and CMGT 347 research paper (winter, juniors) and AIC exam section on Communication Skills (spring 2009). Also, employer survey. (not every year).

Complete details of all the student learning outcomes, corresponding program, department, college and university goals are available in the appendix of this report (Section 5A).

3. Assessment Instrument Table

In addition to assessment data collected in specific courses, the CMGT program uses other assessment instruments. The following table summarizes the instruments that are utilized to collect data, evaluate student learning outcomes and make changes to the construction management program. The instruments utilized to assess student learner outcomes are shown in bold italics in the table.

Instrument	Description	Where Implemented	Schedule	Feedback	Implementation of Change (Adjustment)
Student Evaluation of Instruction Forms (SEOI)	Standardized evaluations pertaining to course and instructor	Completed by each student in each course in the program	Every quarter, usually in the last week	Summary and individual comments supplied to instructor, IET Chair and Dean within three weeks	Faculty member adjusts course delivery/content. IET Chair, Personnel Committee and the Dean of CEPS may make suggestions
Continuous Quality Improvement (CQI)	Instructor self-evaluation pertaining to each course	Completed by each instructor at the conclusion of each course	Every quarter	Instructor implements changes	Faculty member adjusts course deliver/content
<i>Exit Questionnaire</i>	Written document completed by graduating seniors in June. Pertains to education and pending employment.	400 level course in the major	Administered each May or June by the IET Chair or CEPS Associate Dean	Results are summarized and discussed among the faculty and Chair	Faculty/program director implement changes for the upcoming academic year
<i>Focus Group</i>	Chair or Associate Dean conducts a focus group survey with all the graduating seniors, designed to identify program strengths and weaknesses	400 level course in the major	Administered each May or June	Chair or Associate Dean prepares short written report, results are discussed with program director	Faculty/program director implement changes for the upcoming academic year
<i>Alumni Survey</i>	Written survey pertaining to placement, duties, salary, job satisfaction and education at CWU is mailed to all alumni on record that graduated within the past five years		Five-year cycle	Detailed report is prepared	Information is shared with the Executive Members of the Advisory Council (re: job placement and salaries) and with program faculty. Helps to identify direction and satisfaction of program and areas that may need improvement
<i>American Institute of Constructors CPC Level I Exam</i>	National Exam designed for seniors/professionals	Required of all seniors as part of CMGT 488, Professional Certification	Administered every March or April	Summary report is prepared and submitted to the program coordinator each April or May	Results provide comparison with the national averages. These results are arranged by subject, allowing identification of relative strengths and weaknesses
<i>Report of Change Form</i>	Documentation of changes	At all levels	Continuous	Program faculty	Reporting mechanism

4. Narrative Report of Assessment of Student Learning Outcomes

Graduates of the CMGT program are very well received by industry, as indicated by the following measures:

A. Senior Surveys

On June 5, 2011 and June 5, 2012 an exit questionnaire survey was distributed to seniors in the Construction Management program. In June 2011 32 surveys were returned and in June 2012 25 surveys were returned.

Employment: In June 2011: Of the 32 seniors, 31 indicated that they were graduating in June and of those 31, 16 (52%) had accepted full-time employment in the construction industry at the time of the survey. The average starting salary was \$56,394. This was definitely up from 2010 (\$52,119). Salaries ranged from a low of \$44,000 to a high of \$70,000.

In June 2012: Of the 25 seniors who responded to the survey 24 indicated that they were going to graduate in June and of those 24 seniors 23 (96%) indicated that they had accepted a full-time position in the construction industry. The average starting salary was \$55,705, about equal to the previous year. Salaries ranged from a low of \$28,680 (local apartment manager, temporary position) to a high of \$84,000. The strong increase in the percentage of students finding employment from June 2011 to June 2012 is likely directly tied to the stronger economy.

Satisfaction: In addition the seniors were asked to rate their satisfaction pertaining to 14 aspects of their construction management education. A scale of 1 to 5 was used with 1 being “strongly disagree” and 5 being “strongly agree”.

Most of the 14 areas received very favorable feedback, however, one area that has been an issue for years is “Construction Safety”. In 2011 it was scored the lowest of the 14 areas with a 3.2 rating and dropped even further in 2012 with a 2.9 rating. With a new, enthusiastic, engaged safety professional now teaching the course changes are underway and by next spring the survey will likely indicate a higher level of satisfaction.

The highest areas were “Scheduling” with a rating of 4.4 in 2011 and 4.6 in 2012 and “Competitive with other Programs” with a rating of 4.6 in 2011 and 4.8 in 2012. Four other areas of strength, as indicated by 2012 results are “A good balance between theory and practice” (4.4), “Oral Communication” (4.5), “Materials, Methods and Plan Reading” (4.4) and “Bidding and Estimating” (4.8).

These survey results support student learner outcomes (or at least the senior students’ perception of knowledge gained) in two of the three categories:

1. Cognitive/Knowledge/Knowing

B. Graduates shall demonstrate analytical skills and knowledge in the area of structures, construction finance, cost analysis, construction safety, construction materials, construction methods and building systems.

Item from survey	2012 Rating from survey	2011 Rating from survey
Engineering concepts	4.3	4.0
Construction methods and plan reading	4.4	4.3
Management concepts	4.3	4.1
Budgeting and cost control	4.0	3.9
Construction safety	2.9	3.2

3. Skills/Doing

A. Graduates shall be able to estimate, plan and schedule a small commercial/residential or heavy/civil project using microcomputers and appropriate software.

Item from survey	2012 Rating from survey	2011 Rating from survey
Bidding and estimating	4.8	4.4
Scheduling	4.6	4.4

B. Graduates shall be able to demonstrate basic building and material testing skills.

Item from survey	2012 Rating from survey	2011 Rating from survey
Surveying	4.5	4.4

C. Students graduating from the program shall be able to communicate clearly and effectively, orally, graphically and in writing.

Item from survey	2012 Rating from survey	2011 Rating from survey
Written communication	3.8	4.5
Oral communication	4.5	4.3

It is interesting to note that the students felt very satisfied with their oral communication skills obtained in the program (this number actually increased a bit from 2011 to 2012) but satisfaction with the written communication skills recently dropped. There has been consistent effort on the part of the faculty to incorporate written assignments into the CMGT courses. It is hoped that this number will increase with the 2013 survey results.

Employment Information:

Starting Salary 2011	\$56,394			
Employment (Type of firm)	General contractor 83%	Specialty contractor 17%	Owner 0%	
Type of Work	Commercial 28%	Heavy/Civil (includes marine) 61%	Residential 0%	Other (Mechanical/Industrial) 11%

Starting Salary 2012	\$55,705			
Employment (Type of firm)	General contractor 75%	Specialty contractor 21%	Owner 4%	
Type of Work	Commercial 42%	Heavy/Civil (includes marine) 38%	Residential 4%	Other (Mechanical/Industrial/Painting/Drywall) 16%

It is noteworthy that the percentage of graduates placed with commercial contractors was up significantly from 2011 to 2012 and also that the ratio of commercial to heavy/civil employer positions changed drastically. In 2011 more than twice as many graduates found positions with heavy/civil construction firms as opposed to commercial firms. In 2012 commercial positions slightly outweighed heavy/civil placement. In addition a higher percentage of graduates accepted positions with specialty contractors. These trends are likely a result of the shifting economy. As the private sector returns more commercial construction companies are getting work and are able to hire CMGT graduates. In the previous two or three years there was little private money available and as a result most of the graduates found work in companies that perform heavy/civil projects that rely on public money.

Other summary employment data is included below and the complete data from the survey is included in Appendix D.

B. On-Campus Recruiting

During the time period of this report, March 2011 through June 2012, over 50 companies have visited campus to recruit CMGT students for internship and permanent positions. This number is approximately equal to the previous year. These visits occurred in conjunction with the IET Career Fair in the Sub-Rec ballroom in November 2011 (33 companies in attendance) and fairly continuously throughout fall and winter quarters in the Hogue Technology building. All aspects of construction (residential, commercial, heavy/civil, marine and mechanical) were represented. It should be noted that the economy seems to be picking up and all companies that visited campus anticipate hiring for either interns or full-time entry level positions. This is an improvement over 2010 when some companies visited campus but did not anticipate immediate hiring.

C. Focus Group Report

Students are generally satisfied with their learning and educational experience:

On June 1, 2011 Dr. Ethan Bergman, Associate Dean of the College of Education and Professional Studies, held an informal focus group interview with 32 graduating in Hogue room 220. His findings are included in the form of a short report.

June 5, 2011

Memo

To: David Carns, Construction Management Program Coordinator
Michael Whelan, Chair, IET

From: Ethan Bergman, Associate Dean, CEPS

Re: Exit Interview Visit to on June 1, 2011

Thank you for inviting me to interact with the graduating seniors in the Construction Management program. I enjoyed the opportunity to speak with the students and discover more about these students and the program.

In general, they were pleased with the education they received. They were especially pleased with the combination of theory and application of the theory that happens in the program as well as the small class size and applied nature of the program.

I had the students fill out a short questionnaire that you provided. I gave these questionnaires to Susan in the IET office following the meeting. It offered the students the opportunity to write comments beyond those I gathered in class. The students had the choice to submit this anonymously.

I also will summarize below the answers to open ended questions that I asked on the questionnaire and also orally in class to provide some additional information.

Curriculum

Several specific courses were mentioned in the program that the students felt were in need of modification.

- Most of the discussion surrounded the programs that were used in the course and that some were out of date. For example, Microsoft Project is used and according to the students, this is an out of date program. Primavera (sp?) is better in the student's estimation. Other programs were also mentioned.
- The need for a safety certification class. The students mentioned a 3-day certification class that they would like to have as part of the curriculum or as an option.

Strengths

- The Reno experience was mentioned. I asked for a show of hands and it looked like close to the majority of people in the class had participated. The small class size and the availability of faculty were mentioned as a plus. Students mentioned that if problems arise or questions come up that faculty are there and willing to help solve the problem.
- David Carns was mentioned by name as an asset to the program.
- The competitive nature of admission was mentioned as a pro in that the people who get in are vested in the program and curriculum.

Suggestions related to physical facilities, industry involvement, faculty, etc.

- More industry involvement to create networks was mentioned.
- The computer lab and programs are dated
- Dr. Plugge was mentioned related to his lack of approachability. There was a consensus noted by several individuals speaking and many heads nodding that Dr. Plugge has problems explaining things. Because this had been a recurring theme in other exit interviews I have done with the Construction Management Program, I am highlighting it here again.

Other Comments:

- They appreciate the no class on Fridays. However, they would like to have classes more concentrated in the days they are offered so they don't have big breaks during the day. This would free them up to pursue work in the afternoons.
- More help at the front desk would be appreciated
- One or two students thought that COM 345 could be incorporated into Construction Classes and not have a stand-alone course.

Summary

In general, the students were happy with their experience at CWU and in the Construction Management program. They appreciated the hands-on nature of the program and appreciated the availability of the instructors.

Thanks again for asking me to participate in this Exit interview.

Results and Changes: The students had many relevant comments and some good ideas and some have been implemented at the time of this report. For example, a licensed Primavera P6 has been purchased and the software is being used fall quarter 2012 in CMGT 447, Construction Scheduling. The safety class, SHM 323, Construction Safety, has a new instructor and is being revamped to include many relevant hands-on labs such as: Confined Space Training, Lockout Tagout procedures, Fall Protection, Ladder Safety, Scissor Lift Safety, etc. The student comments about the computer lab were legitimate. This has been addressed with the completion of the new addition and renovation of the existing Hogue building, where two computer labs and a color printer are available.

D. AIC Exam

The American Institute of constructors (AIC) exam scores indicate extremely strong performance for students from the Construction Management Program at Central Washington University. Numerical results are utilized to provide data to evaluate student learner outcomes.

The AIC exam is required of all CMGT seniors in the spring of their year of graduation. This is a national, eight-hour comprehensive exam that tests and identifies ten areas of competency. In April 2011 36 CMGT seniors took the exam and in March 2012, 32 CMGT seniors took the exam.

In 2011 the average score for the 36 Central students was 226.25/300 (75%), while the national average was 214.47/300 (72%). One thousand two hundred and fifty nine (1259) students took the exam nationwide. Results for 2011 are summarized below:

- 24 of the 36 (67%) students from CWU who took the exam passed. This is below the 2010 pass rate of 82%.
- 768 of the 1259 (61%) students nationally passed.
- The average score from CWU was 75%, down just a bit from the 2010 average of 77%.
- It is noteworthy that six CWU students scored in the 90th percentile or above and one student scored in the 99th percentile.
- Central students scored higher than the national average in all ten of the subject categories.

In 2012 the average score for the 32 Central students was 228.16/300 (76%), while the national average was 210.59/300 (70%). One thousand two hundred and seventy one (1271) students took the exam nationwide. Results for 2012 are summarized below:

- 29 of the 32 (91%) students from CWU who took the exam passed. This is up considerably from the 2011 pass rate of 67% and is an all-time high.
- 737 of the 1271 (58%) students nationally passed.
- The average score from CWU was 76%, in line with the 2011 average of 75% and the 2010 average of 77%.
- It is noteworthy that five CWU students scored in the 90th percentile or above and one scored in the 98th percentile.
- Central students once again scored higher than the national average in all ten subject categories.

The communication skills category, which involves reading and interpreting plans and written correspondence and writing business letters and memos, has been an issue, both at Central and nationally. It is worthwhile to note the positive trend for CWU students in this category over the past eight years. Other than a spike in 2009 the performance has risen each year.

Category	School	2012	2011	2010	2009	2008	2007	2006	2005
Communication Skills	CWU	71%	69%	67%	76%	65%	63%	59%	62%
	National Average	69%	63%	64%	69%	55%	66%	64%	63%

The scores in the area of communication skills have shown slight improvement over the years and are above the national average but, until 2012, have been slightly below the current AIC designated minimum score of 70%.

The scores in the area of construction safety have increased slightly over the past six years, while the national average in this category has remained fairly constant (see table below). This is likely as a direct result of the fact that a construction specific safety class, SHM 323, Construction Safety, was added to the major four years ago as a replacement for SHM 386, Occupation Safety and Health. This change was the result of student evaluations, senior performance on the AIC Level I exam in “Construction Safety” and alumni feedback.

Category	School	2012	2011	2010	2009	2008	2007	2006	2005
Construction Safety	CWU	72.9%	76.7%	78.1%	72.9%	73%	71%	68%	67%
	National Average	72.5%	76.1%	75.8%	73.2%	70%	73%	72%	70%

The addition of this course appears to have helped the students, even though the exit interview (focus group) designates construction safety as an area of concern. Hopefully the new faculty member hired by the SHM program will add value in this area of study.

E. Student Learning Outcomes Data

Assessment data from the latest assessment cycle of evaluating student learner outcomes is detailed below. This spreadsheet includes data collected through the end of this assessment cycle; March 2011 to June 2012. Future data will be reported on an academic year cycle; September through June.

**Assessment Data, Student Learner Outcomes
Central Washington University Construction Management Program**

Data From Assessment Measures

Outcome	March 2008-March 2009					March 2009-March 2010					March 2010-March 2011					March 2011-June 2012						
	Year: 2008/2009					Year: 2009/2010					Year: 2010/2011					Year: 2011/2012						
	Target	Measure 1	Variance	Measure 2	Variance	Target	Measure 1	Variance	Measure 2	Variance	Target	Measure 1	Variance	Measure 2	Variance	Target	Measure 1	Variance	Measure 2	Variance	Measure 3*	Variance
1. Cognitive/Knowledge/Knowing																						
A Description																						
A Legal, Economic, Social																						
A1 Contracts	80%	88%	8%			80%					80%	79%	-1%			80%	91%	11%				
A2 Laws	80%	76%	-4%			80%					80%					80%						
A3 Dispute resolution	80%	68%	-12%	88%	8%	80%					80%	83%	3%			80%	94%	14%				
A4 Management principles	80%	72%	-8%			80%	87%	7%	82%	2%	80%	79%	-1%	69%	-11%	80%	76%	-4%			-80%	
B Analytical and Systems																						
B1 Accounting	80%					80%					80%					80%						
B2 Mathematics and sciences	80%	70%	-10%			80%	58%	-22%			80%	69%	-11%			80%	79%	-1%	76%	-4%	73%	-7%
B3 Wood, steel and concrete	75%	84%	9%			75%	84%	9%			75%	75%	0%	94%	19%	75%	81%	6%	84%	9%		
B4 Structural mechanics	80%	83%	3%			80%	83%	3%			80%	84%	4%			80%	92%	12%				
B5 Electrical and mechanical	80%	89%	9%	87%	7%	80%	84%	4%			80%	84%	4%	91%	11%	80%	89%	9%	91%	11%		
B6 Soils and foundations	80%	97%	17%			80%	88%	8%			80%	91%	11%			80%	93%	13%				
B7 Financing and money	70%	82%	12%			70%	78%	8%			70%	78%	8%			70%	77%	7%	79%	9%		
B8 Construction safety	70%	73%	3%			70%	78%	8%			70%	78%	8%			70%	77%	7%	73%	3%		
B9 Project administration	70%	76%	6%			70%	76%	6%			70%	76%	6%			70%	75%	5%	77%	7%		
B10 Project planning	80%	95%	15%	95%	15%	80%	88%	8%	100%	20%	80%	84%	4%			80%						
2. Affective/Attitudes/Feelings and Values																						
A Attitudes and Behavior																						
A1 Ethical issues	80%	86%	6%	90%	10%	80%	85%	5%	92%	12%	80%	82%	2%			80%	95%	15%	88%	8%		
A2 Team players	80%	89%	9%			80%	89%	9%			80%	89%	9%			80%	87%	7%				
A3 Industry organizations	80%		-80%	Not Assessed		80%		Not Assessed			80%					80%	71%	-9%				
3. Skills/Doing																						
A Plan and Schedule																						
A1 Quantity take off	90%	93%	3%	98%	8%	90%	94%	4%			90%	96%	6%			90%	95%	5%				
A2 Bid preparation	90%	88%	-2%			90%	89%	-1%			90%	95%	5%			90%	91%	1%	84%	-6%		
A3 Network schedule	70%	94%	24%	80%	10%	70%	92%	22%	82%	12%	70%	94%	24%	82%	12%	70%	78%	8%	94%	24%	78%	8%
B Material Testing																						
B1 Soils and concrete testing	80%	90%	10%	86%	6%	80%	94%	14%	86%	6%	80%	87%	7%	93%	13%	80%	90%	10%	92%	12%	90%	10%
B2 Surveying equipment	80%	91%	11%			80%	91%	11%			80%	93%	13%			80%	87%	7%	89%	9%		
C Communication																						
C1 Technical oral report	80%	85%	5%	92%	12%	80%	82%	2%			80%	89%	9%			80%		-80%				
C2 Business presentation	80%					80%					80%					80%						
C3 Prepare working drawings	80%	90%	10%			80%	88%	8%			80%	90%	10%			80%		-80%				
C4 Sketching and drawing	80%	88%	8%			80%	81%	1%			80%	90%	10%			80%	83%	3%				
C5 Technical written report	80%	85%	5%	96%	16%	80%	74%	-6%			80%	85%	5%			80%	85%	5%				
C6 Business writing	70%	76%	6%			70%	67%	-3%			70%	67%	-3%			70%	69%	-1%	71%	1%		

Shading indicates the data was collected in the spring of 2008
This is included in the March 2008 to March 2009 report

Shading indicates the data was collected from the April 2009 AIC Exam

Shading indicates the data was collected in the spring of 2009
This is included in the March 2009 to March 2010 report

Shading indicates the data was collected from the March 2010 AIC Exam

*Measure 3 was used for this time period because it covers
from March 2011 to June 2012; four academic quarters

There are 28 specific student learner outcomes that have been identified for assessment and continuous quality improvement and, at the time of this writing, data is available for nearly all of the outcomes, as indicated in the table above. Although this is a work in progress, the most recent data indicates that students are at or above the target values for nearly all measures except as noted below.

In the category of Cognitive/Knowledge/Knowing, A. During this assessment cycle the students were slightly below the target values in only one area, Management Principles (-4%), (Outcome 1.A4). Students are exposed to this area in two courses, CMGT 455 and CMGT 456, senior courses that cover construction management applications. They are well above the target in two areas, contracts and dispute resolution.

In the category of Cognitive/Knowledge/Knowing, B. (Graduates shall demonstrate analytical skills and knowledge in the area of structures, construction finance, cost analysis, construction safety, construction materials, construction methods and building systems), students have performed very well. In fact, scores continue to remain strong, especially in the areas of Electrical and Mechanical Systems, Soils and Foundations, Financing and Money and Project Planning. It should be noted that the data from item 1.B2, Mathematics and Science, indicates values of only 1% and 4% below the target value of 80% from this assessment cycle but up considerably from 11% and 22% below the target for the previous two assessment cycles. This item is assessed in IET 312, Strength of Materials, and is based on a calculus-based exam questions. Students continue to improve but, at times, struggle with calculus applications. The plan is to emphasize integral applications in the future in this course (and others) in an attempt to strengthen students' understanding of these concepts and applications.

It should be noted that students appear to be very strong in the areas of understanding ethical issues, Construction Scheduling, Surveying and Project Layout and Engineering Concepts. This last data is supported by relatively high scores in the areas of project planning and scheduling and Surveying and Project Layout on the 2012 AIC exam.

AIC exam results, spring 2012:

Category	Possible Score	Minimum Acceptable Score	CWU School Average	National Average
Planning, Scheduling and Control	47	33 (70%)	36.88 (79%)	34.25 (73%)
Construction Geomatics	7	5 (71%)	5.72 (82%)	5.02 (72%)
Budgeting and Cost Control	27	19 (70%)	21.38 (79%)	19.31 (71%)
Bidding and Estimating	43	30 (70%)	33.38 (78%)	29.86 (69%)

As this data-based assessment process continues it will be possible in future years to identify trends and incorporate changes into the program to help provide the students with an even better education.

5. Appendix: Supporting Documents and Data

- A. Complete Learner Outcomes, Tied to Department, College, University Goals**
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A. Complete Learner Outcomes, Tied to Department, College, University Goals

Student Learning Outcomes (performance, knowledge, attitudes)	Related Program Goals	Related Departmental Goals	Related College Goals	Related University Goals	Method(s) of Assessment	Who Assessed	When Assessed	Standard of Mastery/ Criterion of Achievement (How good does performance have to be?)
1.Cognitive/Knowledge/Knowing								
<p>A. Graduates shall be able to identify and describe the legal, economic and social aspects of the construction industry, the construction process and construction contract systems.</p>	<p>Goal A. Improve the quality of instruction in the program.</p>	<p>1. To nurture excellent programs in Technology, and Engineering Technology related disciplines by maintaining or obtaining national accreditation in the following programs.</p>	<p>Goal 1 - Provide for an outstanding academic and professional growth experience for students at all CWU locations. Goal 2 - Prepare students to participate in an increasingly diverse economy and environment.</p>	<p>Goal I: Maintain and strengthen an outstanding academic and student life on the Ellensburg campus. Goal V: Achieve regional and national prominence for the university.</p>				

1. The student shall be able to identify and explain construction contracts and the roles and responsibilities of all parties involved with 80% accuracy.					CMGT 444 and CMGT 445 Exam	Seniors	Fall	80%
2. The student shall demonstrate knowledge of lien laws, local and national labor laws and the contractors' and owners' rights pertaining to these areas with 80% accuracy.					CMGT 444 and CMGT 445 Final Exam	Seniors	Fall	80%
3. The student shall be able to explain various construction dispute resolution techniques and various steps that may be taken to avoid disputes with 80% accuracy.					CMGT 444/445 Exams	Seniors	Fall	80%
4. Students shall be able to describe basic management principles, organizational behavior and structure as these related to the construction industry with 80% accuracy.					CMGT 455/456 Quizzes or Assignments	Seniors	Spring	80%
B. Graduates shall demonstrate analytical skills and knowledge in the area of structures, construction finance, cost analysis, construction safety, construction materials, construction methods and building systems.	Goal A. Improve the quality of instruction in the program.	1. To nurture excellent programs in Technology, and Engineering Technology related disciplines by maintaining or obtaining national accreditation in the following programs.	Goal 1 - Provide for an outstanding academic and professional growth experience for students at all CWU locations.	Goal I: Maintain and strengthen an outstanding academic and student life on the Ellensburg campus. Goal V: Achieve regional				

				and national prominence for the university.				
1. Students shall demonstrate an understanding of managerial accounting techniques as they relate to the construction industry with 80% accuracy.					CMGT 485 Exam or Assignment	Seniors	Spring	80%
2. Students shall demonstrate an understanding of mathematics and science; including chemistry, physics and mathematics through calculus with 80% accuracy.					IET 312 exam question on shear and moment diagrams	Juniors	Winter or Spring	80%
3. The student shall demonstrate knowledge of types and uses of construction materials, including wood, steel and concrete. This knowledge shall include understanding terminology, units of measure, sizes and gradations, standard designations, specifications and testing techniques, with 75% accuracy.					CMGT 265 Exam questions CMGT 460/461, average of exam 1	Sophomores Seniors	Fall or Winter Spring	75% 75%
4. Students shall demonstrate knowledge in the areas of structural mechanics, including statics and strength of materials with 80% accuracy.					IET 311 Exam, Find reactions for a beam	Juniors	Fall or Winter	80%

5. Students shall demonstrate an understanding of, electrical and mechanical systems with 80% accuracy.					CMGT 320, Assignment to calculate the electrical load for a house	Juniors/seniors	Winter	80%
					CMGT 442, Assignment to calculate the heat load for a building	Juniors/Seniors	Spring	80%
6. Students shall demonstrate knowledge of soil mechanics and foundation types and principles of design with 80% accuracy.					CMGT 450, Assignment to calculate the bearing capacity of a shallow foundation	Seniors	Fall	80%

7. Students shall demonstrate a working knowledge of construction cost accounting, financing, insurance, bonding, bidding and procurement practices, depreciation and expensing, cost forecasting, cash flow requirements, time value of money and project payment procedures, with 70% accuracy.					AIC Exam section; Budgeting, Costs and Cost Control, overall scores of CMGT seniors	Seniors	Spring	70%
8. The student shall demonstrate knowledge of construction safety training, procedures, record keeping, maintenance, inspection, penalties and compliance with state and federal regulations with 70% accuracy.					AIC Exam section; Construction Safety, overall scores of CMGT seniors	Seniors	Spring	70%
					SHM 323 Final exam, average scores	Juniors	Fall	70%

9. Students shall demonstrate an understanding of construction project management; including concepts, roles and responsibilities of individuals, administrative systems and procedures, cost control systems, proper job site and office documentation and quality control philosophies and applications with 70% accuracy					AIC Exam section; Management Concepts, overall scores of CMGT seniors	Seniors	Spring	70%
10. Students shall be able to demonstrate knowledge of site mobilization and short term project planning, including staffing, material requirements and equipment selection and utilization with 80% accuracy.					CMGT 455/456 Project	Seniors	Spring	80%

2.Affective/Attitudes/Feelings/Values								
A. Graduates shall obtain employment as construction professionals in entry-level positions. Graduates shall also possess the skills, knowledge, attitude and behavior to advance within the industry.	Goal A. Improve the quality of instruction in the program.	1. To nurture excellent programs in Technology, and Engineering Technology related disciplines by maintaining or obtaining national accreditation in the following	Goal 4 - Build mutually beneficial partnerships with alumni, industry, professional groups, institutions,	Goal I: Maintain and strengthen an outstanding academic and student life on the Ellensburg campus. Goal V:				

		programs. 5. Continuously improve the cultural educational environment.	and the communities surrounding our campus locations.	Achieve regional and national prominence for the university.				
1. Students shall be able to identify and understand ethical issues relevant to the various parties in the construction process, and to react in a manner consistent with ethical standards established by the construction industry associations, with 80% accuracy.					Average scores of CMGT 265 ethics assignments Average score of CMGT 444/445 ethics assignment	Sophomores Seniors	Fall or Winter Fall	80% 80%
2. Students shall demonstrate the ability to work in groups and act as team players, with a success rate of 80%.					Average scores on CMGT 267 final project	Sophomores	Spring	80%
3. The student shall demonstrate knowledge of construction industry organizations, such as; The Associated General Contractors of America (AGC), The National Association of Home Builders (NAHB), The Mechanical Contractors Association (MCA), The American Council for Construction Education and The American Institute of Constructors. Students shall also demonstrate knowledge of the commitment and importance of these organizations to society, with 80% accuracy.					CMGT 265 Assignment or exam	Sophomores	Fall/Winter	80%

3. Skills/Doing								
A. Graduates shall be able to estimate, plan and schedule a small commercial/residential or heavy/civil project using microcomputers and appropriate software.	Goal A. Improve the quality of instruction in the program.	1. To nurture excellent programs in Technology, and Engineering Technology related disciplines by maintaining or obtaining national accreditation in the following programs. 5. Continuously improve the cultural educational environment.	Goal 1 - Provide for an outstanding academic and professional growth experience for students at all CWU locations. Goal 5 - Provide professional, high-quality staffing, facilities, technologies, and appropriate resources to ensure the highest levels of academic and professional development.	Goal I: Maintain and strengthen an outstanding academic and student life on the Ellensburg campus. Goal V: Achieve regional and national prominence for the university.				
1. Students shall be able to perform accurate detailed quantity takeoffs on a commercial/residential project, including all Construction Specification Institute (CSI)					CMGT 343 Final project scores	Juniors	Winter	90%

divisions, both manually and utilizing Microsoft Excel, with a success rate of 90%.								
2. Students shall be able to accurately prepare a bid, based on pricing of materials, labor, equipment, overhead and profit for a commercial/residential or heavy/civil project. In addition, students choosing the general construction option shall be able to utilize estimating software, such as Timberline, to create and submit a bid for a residential/commercial project. Students choosing the heavy/civil construction option shall be able to estimate and bid a heavy/civil project using appropriate software, with an accuracy rate of 90%.					CMGT 344/345 Final Project	Juniors	Spring	90%
3. Students shall be able to prepare, analyze and update both a Gantt chart and a network (critical path method) schedule for a commercial/residential or heavy/civil project, both manually and utilizing scheduling software (Microsoft Project, SureTrak or similar scheduling software), with a success rate of 70%.					AIC Exam section; Planning, Scheduling and Control, overall score of CMGT seniors CMGT 447 Final project average score	Seniors Seniors	Spring Fall	70% 70%

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<p>B. Graduates shall be able to demonstrate basic building and material testing skills.</p>	<p>Goal A. Improve the quality of instruction in the program.</p>	<p>1. To nurture excellent programs in Technology, and Engineering Technology related disciplines by maintaining or obtaining national accreditation in the following programs.</p> <p>5. Continuously improve the cultural educational environment.</p>	<p>Goal 1 - Provide for an outstanding academic and professional growth experience for students at all CWU locations.</p> <p>Goal 5 - Provide professional, high-quality staffing, facilities, technologies, and appropriate resources to ensure the highest levels of academic and professional development.</p>	<p>Goal I: Maintain and strengthen an outstanding academic and student life on the Ellensburg campus.</p> <p>Goal V: Achieve regional and national prominence for the university.</p>				
<p>1. Students shall demonstrate the ability to perform basic field and lab tests on construction materials, including concrete, and soils with 80% accuracy.</p>					<p>CMGT 450, Overall average lab scores</p> <p>CMGT 460/461, Slump and</p>	<p>Seniors</p> <p>Seniors</p>	<p>Fall</p> <p>Spring</p>	<p>80%</p> <p>80%</p>

					cylinder tests, overall average lab report scores			
2. Students shall demonstrate the ability to properly use and care for construction surveying instruments, including levels, transits, theodolites, tapes and electronic distance measuring devices, as these instruments relate to construction projects, with 80% accuracy.					CMGT 267 Lab, overall average lab scores	Sopho mores	Spring	80%

C. Students graduating from the program shall be able to communicate clearly and effectively, orally, graphically and in writing.	Goal A. Improve the quality of instruction in the program.	1. To nurture excellent programs in Technology, and Engineering Technology related disciplines by maintaining or obtaining national accreditation in the following programs. 5. Continuously	Goal 1 - Provide for an outstanding academic and professional growth experience for students at all CWU locations. Goal 2 - Prepare students to participate in an increasingly diverse economy and environment.	Goal I: Maintain and strengthen an outstanding academic and student life on the Ellensburg campus. Goal V: Achieve regional and national prominence for the university.				
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		improve the cultural educational environment.						
1. Students shall be able to effectively prepare and present a technical oral report on various construction topics, with 80% success					CMGT 346/347 Student presentation average scores	Juniors	Winter	80%
2. Students demonstrate the ability to make business and professional oral presentations, with 80% success.					CMGT 485 Student presentation average scores	Seniors	Spring	80%
3. Students shall demonstrate the ability to prepare and edit a complete set of working drawings for both a residential or commercial building using AutoCAD software, with 80% accuracy.					IET 161 Final project average score	Freshmen/Sophomores Juniors/Seniors	Fall/Winter/Spring	80%
4. Students shall be able to communicate graphically using standard sketching and engineering drawing techniques, including proper dimensioning, orthographic projections, sections,					CMGT 265 Sketching and drawing assignments, average scores	Sophomores	Fall/Winter	80%

auxiliary views and detail views, with 80% accuracy.								
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5. Students shall be able to properly research a topic, using the reference materials at the library, the Internet and industry resources to prepare written technical reports, with 80% accuracy.					CMGT 346/347 Research paper average score	Juniors	Winter	80%
6. Students shall be able to clearly demonstrate their written communication skills by writing prose, business letters, resumes, and daily job reports that include proper grammar, spelling and sentence structure, with a 70% success rate.					AIC Exam section; Communication Skills on written skills, overall score of CMGT seniors	Seniors	Spring	70%

B. AIC Exam Results, Spring 2011

Central Washington University (WA001)

CQE Level 1 - Construction Fundamentals - April 2011

	Your School Candidates	National Candidates			Average Score Percentage Comparison					
Number of Candidates Tested:	36	1259								
Number of Candidates Passed:	24	768								
Number of Candidates Failed:	12	491								
Score Summaries										
Total Score	School Average	National Average	Max Possible	Passing Score						
Average Total Score	226.25	214.47	300	210						
Highest Total Score	275	280								
Lowest Total Score	160	80								
Area Scores (Averages)	School Average	National Average	Max Possible	Min Acceptable						
Communication Skills	11.67 **	10.69	17	12						
Engineering Concepts	20.36	18.76	27	19						
Management Concepts	9.89	9.48	13	9						
Materials, Methods, and Plan Reading	23.17	22.75	31	22						
Bidding and Estimating	37.50	35.62	51	36						
Budgeting, Costs, and Cost Control	22.97	21.59	30	21						
Planning, Scheduling, and Control	37.33	35.50	48	34						
Construction Safety	16.11	15.99	21	15						
Surveying and Project Layout	5.17	4.53	6	4						
Project Administration	42.08	39.56	56	39						

** Indicates areas of weakness

AIC Exam Results, Spring 2012

AIC - Constructor Certification Commission

School Report
(Graduating Seniors)

Central Washington University (WA001)

CQE Level 1 - Construction Fundamentals - March 2012

	Your School Candidates	National Candidates			
Number of Candidates Tested:	32	1271			
Number of Candidates Passed:	29	737			
Number of Candidates Failed:	3	534			
Score Summaries					
Total Score	School Average	National Average	Max Possible	Passing Score	Average Score Percentage Comparison
Average Total Score	228.16	210.59	300	210	
Highest Total Score	257	274			
Lowest Total Score	192	55			
Area Scores (Averages)	School Average	National Average	Max Possible	Min Acceptable	
Communication Skills	21.16	20.62	30	21	
Engineering Concepts	22.16	20.25	29	20	
Management Concepts	27.72	25.83	36	25	
Materials, Methods, and Project Modeling and Visualization	22.81	21.42	32	22	
Bidding and Estimating	33.38	29.86	43	30	
Budgeting, Costs, and Cost Control	21.38	19.31	27	19	
Planning, Scheduling, and Schedule Control	36.88	34.25	47	33	
Construction Safety	13.13	13.05	18	13	
Construction Geomatics	5.72	5.02	7	5	
Project Administration	23.84	20.95	31	22	
					<p>** Indicates areas of weakness</p>

C. Exit Interview Form, Used Spring 2011 and Spring 2012



CENTRAL WASHINGTON UNIVERSITY

Your future is Central.

DEPARTMENT OF INDUSTRIAL AND ENGINEERING TECHNOLOGY

Construction Management Exit Interview Questionnaire

This form is confidential and will be used for program assessment purposes. It is to be completed prior to graduation from the Construction Management program.

Name (optional) _____ Graduation Date _____

A. Background:

1. Why did you choose the CMGT program at CWU? _____

2. What previous construction-related experience have you had? _____

3. What other college level education have you had prior to coming to CWU?

_____ None _____ Other University, _____ Number of hours

_____ Community College, No Degree _____ University Degree, Program _____

_____ Community College, Associate Degree

4. How did you hear about the CWU program? _____

B. Post-graduation employment:

1. Have you accepted a position? _____ yes _____ no (skip to question 3)

2. If yes, position title _____

Starting Salary _____ Starting Date _____

Company Name _____

Company Address _____

- How would you best categorize this company (circle all that apply)?

General Contractor Specialty Contractor Supplier Owner Self-employed Other

- Type of work associated with your employer _____

(commercial, residential, heavy/civil, marine, utility, mechanical, electrical, industrial, etc.)

- How did you become aware of this position? _____

- What factors were important in making this decision?

3. If you have not accepted a position, what is your career objective?

- Have you interviewed? _____ no _____ yes _____ number of companies

C. Continuing Education

Do you plan to obtain additional education? _____no _____ yes

_____ Graduate School - Type of Program _____

_____ Other BS program _____

_____ Special Certifications _____

D. Construction Management Education from Central Washington University

How strongly I agree that...					
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
my education experience at CWU prepared me to compete with graduates from other construction programs.	O	O	O	O	O
my studies at CWU contained a good balance between theory and application.	O	O	O	O	O
the CMGT program adequately developed my written communication skills.	O	O	O	O	O
the CMGT program adequately developed my oral communication skills.	O	O	O	O	O
the CMGT program adequately developed my computer skills (spreadsheets, estimating, scheduling, CAD).	O	O	O	O	O
the CMGT program prepared me well in the area of engineering concepts and applications (statics, strength of materials, soils, etc.)	O	O	O	O	O
the CMGT program prepared me well in the area of management concepts.	O	O	O	O	O
the CMGT program prepared me well in the area of materials, methods and plan reading.	O	O	O	O	O
the CMGT program prepared me well in the area of bidding and estimating.	O	O	O	O	O
the CMGT program prepared me well in the area of budgeting, costs and cost control.	O	O	O	O	O
the CMGT program prepared me well in the area of planning and scheduling.	O	O	O	O	O
the CMGT program prepared me well in the area of construction safety.	O	O	O	O	O
the CMGT program prepared me well in the area of surveying and project layout.	O	O	O	O	O
the CMGT program prepared me well in the area of project administration.	O	O	O	O	O

E. General Comments

1. What specific curriculum changes (course additions, course deletions, course changes) would you recommend?

2. What do you consider to be the major strengths or most positive aspects of the construction management program?

3. What suggestions (physical facilities, industry involvement, faculty, etc.) would you like to make relative to making improvements to the construction management program?

4. Other comments?

D. Senior Survey Data, Spring 2011

2011 CMGT Senior Focus Group Survey Data																								
Year	2011	Satisfaction																						
Date	1-Jun-11	1 strongly disagree																						
Surveys	Returned	2 disagree																						
	32	3 neutral																						
		4 agree																						
		5 strongly agree																						
No.	Comments	June Grad	Full-time Job	Salary	Type of firm	Type of Work	Continue Education	competitive other programs	good balance comm.	written comm.	oral comm.	computer skills	engr. concepts	manage. methods	estimating	planning	methods	bugging	control	scheduling	safety	surveying	administration	project
1		1	1	60,000	GC	Heavy/civil	1	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
2		1	1	70,000	GC	Heavy/civil	1	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
3		1	1	61,500	GC	Heavy/civil	1	5	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
4		1	1	49,500	Specialty	Wastewater	1	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
5		1	1		GC	TI	1	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
6		1	1	55,000	GC	Industrial	1	5	4	5	4	5	4	5	4	5	4	5	4	5	4	5	4	5
7		1	1	44,000	GC	Commercial	1	5	4	3	4	4	4	4	4	2	4	4	4	4	4	4	4	4
8		1	1	54,000	GC	Commercial	1	5	5	5	4	4	5	5	5	5	5	5	5	5	5	5	5	5
9		1	1	50,000	GC	Heavy/civil	1	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
10		1	1	55,120	GC	Marine	1	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
11		1	1		Specialty	Mechanical	1	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
12		1	1	62,000	GC	Marine	1	5	4	4	5	4	5	4	5	4	5	4	5	4	5	4	5	4
13		1	1	55,000	GC	Commercial	1	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
14		1	1	52,000	GC	Heavy/civil	1	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
15		1	1		Specialty	Commercial	1	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
16		1	1		GC	Heavy/civil	1	4	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
17		1	1	65,500	GC	Heavy/civil	1	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
18		1	1		GC	Heavy/civil	1	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
19		1	1				1	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
20		1	1				1	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
21		1	1				1	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
22		1	1				1	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
23		1	1				1	5	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
24		1	1				1	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
25		1	1				1	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
26		1	1				1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
27		1	1				1	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
28		1	1				1	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
29		1	1				1	5	5	3	4	5	3	5	4	4	5	4	4	5	4	5	4	5
30		1	1				1	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
31		1	1				1	4	3	4	4	4	2	3	3	3	3	3	3	3	3	3	3	3
32		1	1				1	4	4	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4
33																								
34																								
35																								
36																								
37																								
38																								
39																								
16	\$56,354				Satisfaction		12	4.6	4.2	4.2	4.3	4.1	4	4.1	4.3	4.4	4.3	3.9	4.4	4.4	4.4	3.2	4.4	3.9
H/C	8																							
Commercial	5																							
Marine	2																							
Other	3																							
Common comments:		New scheduling software (Primavera) Safety class needs improvement 16 of 32 Survey respondents indicated full time employment																						

Senior Survey Data, Spring 2012

2012 CMGT Senior Focus Group Survey Data

No.	Comments	June Grad	Full-time Job	Salary	Type of firm	Type of Work	Continue Education	competitive other programs	good balance	written comm.	oral comm.	computer skills	enrg. concepts	manage. methods	budgeting	scheduling	safety	surveying	project administration
Year	Date	Surveys	Returned	2012 30-May-12	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	
1	Better computers	1	1	28,680	Apartment	Manager	1	4	4	4	4	5	4	5	3	4	3	4	3
2	Add BIM	1	1	50000	GC	Commercial	1	4	5	4	5	2	4	5	4	5	2	3	1
3	Better adjucts	1	1	60000	GC	Commercial	1	5	4	5	4	5	3	4	5	4	5	4	5
4		1	1	57000	GC	Heavycivil	1	5	4	3	4	5	4	4	4	5	5	2	4
5		1	1	52000	GC	Heavycivil	1	5	5	5	4.5	4.5	5	5	5	4.5	5	3	5
6	Better Safety	1	1	65000	GC	Commercial	1	5	5	5	3	4	5	5	5	5	5	3	4
7	Better adjucts	1	1	56000	GC	Commercial	1	5	4	4	4	4	4	4	4	5	5	3	4
8		1	1	52000	GC	Commercial	1	5	4	3	5	4	4	4	4	4	3	4	3
9	Better Safety, Additional HC	1	1	55000	GC	Heavycivil	1	5	4	4	5	4	4	5	4	5	3	4	4
10	Additional HC facility	1	1	55000	Specialty	Painting	1	4	4	4	5	3	4	3	5	4	5	3	4
11		1	1	58000	GC	Heavycivil	1	5	5	3	5	5	5	5	5	5	4	3	5
12	BIM, enston control, computers	1	1				1	5	5	4	4	3	3	4	3	5	4	4	4
13	Better adjucts, safety, sch. Software	1	1	54000	Specialty	Mechanical	1	5	5	3	4	5	4	4	4	4	4	3	4
14	Better safety, more field trips	1	1	61000	GC	Commercial	1	4	4	5	4	4	5	4	5	4	5	3	4
15		1	1	49100	GC	Heavycivil	1	5	4	3	4	3	4	3	5	4	5	3	5
16	Use Primavera	1	1	48100	GC	Wastewater	1	4	4	3	5	5	4	4	5	4	4	1	4
17	Better adjucts	1	1	46000	Specialty	Painting	1	5	5	4	4	4	4	5	5	4	5	4	4
18	Better adjucts, new computers	1	1	55000	GC	Commercial	1	5	5	4	4	4	4	4	4	4	4	4	5
19	More hands on	1	1	79740	GC	Commercial	1	4	4	4	5	5	5	5	5	4	5	4	5
20	Better safety	1	1	52000	Specialty	Roads	1	2	3	4	4	2	4	3	4	4	2	4	3
21	Better safety, better adjucts	1	1	60000	GC	Mechanical	1	5	5	3	4	5	3	4	5	4	5	3	4
22	Primavera CMGT 443 improvement	1	1	84000	GC	Commercial	1	5	5	5	5	5	5	5	5	5	5	5	5
23	Add BIM, better adjucts	1	1	54000	GC	Heavycivil	1	5	4	5	5	5	4	5	4	5	4	5	4
24	Move CMGT 465 earlier in year	1	1		Specialty	Drywall	1	5	3	3	5	4	2	4	4	3	4	5	3
25	BIM, Lean construction	1	1	43000	GC	Commercial	1	5	5	3	3	5	5	5	5	4	5	4	5
26																			
27																			
28																			
29																			
30																			
31																			
32																			
33																			
34																			
35																			
36																			
37																			
38																			
39																			
24				\$55,705		Satisfaction	11	4.8	4.4	3.8	4.5	4.1	4.3	4.3	4.4	4.6	2.9	4.5	4

HC 8
Commercial 10
Mechanical 2
Other 4

24 of 25 Survey respondents indicated full time employment

Common comments: New scheduling software (Primavera)
Safety class needs improvement

E. Report of Change Forms

Report of Change **Program Assessment, Construction Management** **Central Washington University**

Date of report: March 2011 Name: Dave Carns

Description of concern:

The industry seems to be moving away from MS Project as scheduling software. This is the software used for teaching in CMGT 447.

How and when the concern was identified:

This concern has been identified for some time (probably two years or more) through the Advisory Council, student responses on course reviews and informal feedback from alumni and industry representatives.

Actions taken or to be taken:

The CMGT 447 course was reviewed by the industry advisory council, including the use of MS Project. Feedback indicated that perhaps it would be best to change to P6, a Primavera product (now owned by Oracle Systems). Contact has been made with Primavera and CWU's computer services with the goal of having P6 ready to use in CMGT 447 by fall quarter 2011.

Review method and timeline:

This will be reviewed after the end of fall quarter 2011.

Report of Change
Program Assessment, Construction Management
Central Washington University

Date of report: April 2012 Name: Dave Carns

Description of concern:

The SHM 323, Construction Safety, Class does not seem to be doing the job.

How and when the concern was identified:

This concern has been identified for some time (probably two years or more) through comments from the students and from performance on the AIC exam.

Actions taken or to be taken:

The SHM program hired a new tenure-track faculty member in the fall of 2011. This faculty member has a PhD in civil engineering and extensive experience in the commercial construction industry, working for Hoffman Construction in the Portland, Oregon area. This faculty member has been working with the CMGT program and is scheduled to teach SHM 323 beginning in the fall of 2012. The plan is to incorporate the OSHA 10 hour training into the course so that everyone who takes the course receives the 10-hour card.

Review method and timeline:

This will be reviewed after the end of fall quarter 2012 and each spring quarter as the CMGT students work their way through the revamped course and their knowledge is reflected by their scores on the national AIC exam.

Report of Change
Program Assessment, Construction Management
Central Washington University

Date of report: May 15, 2012 Name: Dave Carns

Description of concern:

The name of the department, Industrial and Engineering Technology, did not reflect the true nature of the programs in the department and does not contain any information about the largest program in the department, Construction Management.

How and when the concern was identified:

This concern/opportunity was identified in March of 2009 after the ACCE team visited campus on March 7-10. The issue is identified in “undeveloped potentials” in the Visiting Team Report.

Actions taken or to be taken:

The department name has been officially changed to the Department of **Engineering Technologies, Construction and Safety**, as of April 2012.

Review method and timeline:

This new department title should take care of the “undeveloped potential” identified in the ACCE Visiting Team Report, as it reflects the nature of the programs in the department and highlights the two prominent programs, Construction and Safety.

Report of Change
Program Assessment, Construction Management
Central Washington University

Date of report: May 8, 2012 Name: Dave Carns

Description of concern:

Not necessarily a concern but an opportunity to invite a guest speaker, who works for a contractor, to speak to the CMGT 460, Concrete Construction class, on the subject of managing a large concrete construction project.

How and when the concern was identified:

This concern/opportunity was identified in March of 2012 through the Construction Management Advisory Council. A contractor member of the council, Tom Cole, volunteered to review the course materials for CMGT 460 and suggested bringing in such a speaker.

Actions taken or to be taken:

On May 1, 2012, Amy Jenne, CWU CMGT alum and Vice President of Apollo, Inc., a heavy civil construction company based out of Kennewick, WA, spoke to the class on managing large concrete construction projects. She included many examples, including bridge construction, wastewater treatment plants and water treatment plants. She spoke about planning the project, forming the concrete, including how to select forming systems, placing the concrete etc. The presentation was very beneficial in the sense that it gave the students a great perspective into all the planning that goes into such a project.

Review method and timeline:

Students in CMGT 460 will be given the opportunity to provide feedback on the guest speakers in the class. In addition, either Ms. Jenne or another contractor will be invited back the next time the class is offered, in the spring of 2013.