

University of Washington
Department of Construction Management
Academic Quality Improvement Plan Report for AY 2016/7
Bachelor of Science in Construction Management Program

This report highlights the findings of the AY 2016/7 assessment cycle. It serves as the basis for the faculty and the Construction Industry Advisory Council (CIAC) review during the fall of 2017. Recommendations and any plans for updates will be documented in an “Appendix C after review report”.

1. Strategic Plan for the Educational Unit

The strategic plan for the University of Washington’s Construction Management department is found in a separate document titled “CM Strategic Plan 2015-2017” dated 8 October 2015.

This plan was reviewed by the faculty and staff in the fall of 2015 and updated in the fall of 2016. A brief version of our Mission, Vision, and Objectives can be found at:

http://cm.be.washington.edu/about_cm/mission/

2. Degree Program Assessment Plan

A comprehensive assessment plan provides complete continuous improvement of our undergraduate degree program. AY 2015/6 was the first year of implementation of this plan. The plan was modified in the fall of 2016.

2.1 Undergraduate Program Mission Statement

The construction management program prepares individuals for careers in the construction and related industries by providing a high quality education.

2.2 Degree Program Objectives

The following objectives are part of the strategic plan that relates to the undergraduate program and will be reviewed annually. The framework of these objectives are to provide accessible, challenging, quality, and contemporary educational program that prepares individuals to assume technical and managerial positions in the construction and related industries. Specific objective measurements with results are:

- Number of students admitted each year, between 60-70: Fall **2017: 60**
- Number of transfer students admitted each year, > 25%: **2017: 18%**
- Placement rate of graduates, > 95%, **83%**
- Accreditation by American Council for Construction Education (ACCE): **yes, 3-year report and Approved by ACCE July 2016.**
- Provide experiential learning opportunities for students.
 - Number of students with internships, 100%, **100%**

A historical representation of this data is found in Appendix A. This data will be reviewed for trends.

2.3. Program Learning Outcomes

7/5/2018

The program learning outcomes meet and exceed the student learning outcomes required by ACCE. In addition to the program objectives listed above, the Student Learning Outcomes (SLOs) will be assessed, reviewed, and results acted on annually. Student work was assessed for a minimum level of conformance and the standard of the program's performance criteria. Individual assessment tools for specific SLOs are found in their respective notebooks.

Minimum level of conformance is limited to the 20 SLOs that are being assessed by one direct measure and one indirect measure. Our plan is to directly assess SLO at different times during a student's tenure. We will also indirectly assess all SLOs as part of the senior exit survey.

2.4 Assessment tools and frequency of use for Student Learning Outcomes (2016/17)

The following table provides a guide for which class has Student Learning Outcomes assessed. Each student learning outcome is assessed at least twice and at least one of these assessments is a direct assessment. DA = Direct Assessment, IA = Indirect Assessment

		1 WRITE	2 ORAL	3 SAFE	4 EST	5 SCH	6 ETHIC	7 DOCS	8 METHOD	9 MULIT TEAM	10 TECH	11 SURVEY	12 DELIVERY	13 RISK	14 ACCT	15 QC	16 CONTROL	17 LAW	18 SUSTAIN	19 STRUCT	20 MEP
CM 301	Write	DA																			
CM 310	Intro												DA								
CM 311	Docs							DA													
CM 312	Acct														DA						
CM 313	Meth									DA											
CM 321	Mech																				DA
CM 322	Elect																				DA
CM 323	Meth 2								DA							DA					
CM 332	Equip								DA												
CM 331	Est 1				DA																
CM 333	Safe			DA																	
CM 334	Survey											DA									
CM 335	Sustain																			DA	
CM 410	Est 2				DA																
CM 411	Sched					DA											DA				
CM 412	Practice						DA							DA							
CM 414	BIM										DA										
CM 420	Temp Str																				DA
CM 421	PM												DA		DA	DA					
CM 422	Comp App										DA										
CM 423	Law																	DA			
CM 431	Capstone		DA	DA		DA															
CM 432	Soils																				DA
CM 434	Lean																DA				
ARCH 321	Structures									DA											
Exit Survey		IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA

Student Learning Outcomes

1. Create written communications appropriate to the construction discipline.
2. Create oral presentations appropriate to the construction discipline.
3. Create a construction project safety plan.
4. Create construction project cost estimates.
5. Create construction project schedules.
6. Analyze professional decisions based on ethical principles.
7. Analyze construction documents for planning and management of construction processes.
8. Analyze methods, materials, and equipment used to construct projects.
9. Apply construction management skills as a member of a multidisciplinary team.
10. Apply electronic-based technology to manage the construction process.
11. Apply basic surveying techniques for construction layout and control.
12. Understand different methods of project delivery and the roles and responsibilities of all constituencies involved in the design and construction process.
13. Understand construction risk management.
14. Understand construction accounting and cost control.
15. Understand construction quality assurance and control.
16. Understand construction project control processes.
17. Understand the legal implications of contract, common, and regulatory law to manage a construction project.
18. Understand the basic principles of sustainable construction.
19. Understand the basic principles of structural behavior.
20. Understand the basic principles of mechanical, electrical and piping systems.

2. 5. Assessment performance criteria results for Student Learning Outcomes

The following tables list the specifics of the assessment tools used, the performance criteria results used to measure the achievement of a student learning outcome, and the current results. A historical representation of this data is found in Appendix B. This data will be reviewed for trends.

1. Create Written Communication appropriate to the construction discipline

Where assessed/Who	Assessment item	Performance Criteria	AY 15/16	AY 16/17	AY 17/18	AY 18/19
CM 301 Construction Communications/ Instructor	Business letter assignment	85% of the students will earn greater than 85%	A Missing W Missing S 46%	A 63% W 86% S 68@		
Exit Survey/ Academic Advisor	Question on how well students feel they can accomplish SLO	Greater than 3.5 on scale of 1 to 5	4.0	4.0		

2. Create oral presentations appropriate to the construction discipline

Where assessed/ Who	Assessment item	Performance Criteria	AY 15/16	AY 16/17	AY 17/18	AY 18/19
CM 431 Capstone/ Juror	Presentation to juror	100% of the students earn greater 40 out of 60 points	A 100% B 100% C 100%	A 100% B 100%		
Exit Survey/ Academic Advisor	Question on how well students feel they can accomplish SLO	Greater than 3.5 on scale of 1 to 5	4.0	3.5		

7/5/2018

3. Create a construction project safety plan

Where assessed/ Who	Assessment item	Performance Criteria	AY 15/16	AY 16/17	AY 17/18	AY 18/19
CM 333 Safety/ Instructor	Safety plan for class project	At least 85% of students earn at least 85%	100%	82%		
CM 431 Capstone/ Instructor	Site specific hazard analysis plan	80% of students score greater than 4 out of 5 points	A 100% B 87% C 85%	A 100% B 91%		
Exit Survey/ Academic Advisor	Question on how well students feel they can accomplish SLO	Greater than 3.5 on scale of 1 to 5	3.7	4.0		

4. Create construction project cost estimates.

Where assessed/ Who	Assessment item	Performance Criteria	AY 15/16	AY 16/17	AY 17/18	AY 18/19
CM 331 Construction Estimating/ Instructor	Concrete MTO as homework assignment	100% of students earn at least 80%	A 89% B 86% C 95%	A 85% B 95% C 85%		
CM 410 Construction Estimating II/ Instructor	Self-perform/ GCs/ GMP estimate as homework assignment	100% of students earn at least 80%	A 92 % B 96%	A 97% B 96%		
Exit Survey/ Academic Advisor	Question on how well students feel they can accomplish SLO	Greater than 3.5 on scale of 1 to 5	4.0	3.9		

5. Create construction project schedules

Where assessed/ Who	Assessment item	Performance Criteria	AY 15/16	AY 16/17	AY 17/18	AY 18/19
CM 411 Project Planning and Control/ Instructor	Final exam question to develop WBS and an activity network	80% of students earn at least 80%	A 85% B 89%	A 81% B 91%		
CM 431 Capstone/ Instructor	Create schedule of construction project with over 100 activities	80% of students earn at least 80%	A 80% B 85% C 83%	A 88% B 88%		
Exit Survey/ Academic Advisor	Question on how well students feel they can accomplish SLO	Greater than 3.5 on scale of 1 to 5	3.7	3.6		

6. Analyze professional decisions based on ethical principles

Where assessed/Who	Assessment item	Performance Criteria	AY 15/16	AY 16/17	AY 17/18	AY 18/19
CM 412/ Instructor	Ethics paper	85% of the students earn at least an 80%	60%	72%		
Exit Survey/ Academic Advisor	Question on how well students feel they can accomplish SLO	Greater than 3.5 on scale of 1 to 5	3.9	4.1		

7. Analyze construction documents for planning and management of construction processes

Where assessed/Who	Assessment item	Performance Criteria	AY 15/16	AY 16/17	AY 17/18	AY 18/19
CM 311 Construction Contract Documents/ Instructor	Series of questions on final exam	80% of students earn at least 80%	A 70% B 80%	A 59% B 64% C 81%		
Exit Survey/ Academic Advisor	Question on how well students feel they can accomplish SLO	Greater than 3.5 on scale of 1 to 5	4.1	4.0		

8. Analyze methods, materials, and equipment used to construct projects.

Where assessed/Who	Assessment item	Performance Criteria	AY 15/16	AY 16/17	AY 17/18	AY 18/19
CM 323 Construction Methods and Materials II/ Instructor	Series of questions on midterm and final exams	45% of the students earn at least 80%	65%			
CM 332 Construction Equipment Management/ Instructor	Series of calculation on a midterm exam to find the quantities, cycle times and number of trips	75% of students earn greater than 80%	93%			
Exit Survey/ Academic Advisor	Question on how well students feel they can accomplish SLO	Greater than 3.5 on scale of 1 to 5	3.6	3.6		

9. Apply construction management skills as a member of a multidisciplinary team

Where assessed/Who	Assessment item	Performance Criteria	AY 15/16	AY 16/17	AY 17/18	AY 18/19
CM 313 Construction Methods and Materials/ Instructor	Methods and Materials lab to layout and construct steel structure	100% of the students earn 100% on laboratory assignment	Missing SLO Development, Completed 8/2016	98%		
Arch 321 Structures II/ Instructor	Team assignment perform structural analysis teams mixed with ARCH/ CM students	100% of the students earn greater than 90%	100%	100%		
Exit Survey/ Academic Advisor	Question on how well students feel they can accomplish SLO	Greater than 3.5 on scale of 1 to 5	3.9	3.9		

10. Apply electronic-based technology to manage the construction process

Where assessed/Who	Assessment item	Performance Criteria	AY 15/16	AY 16/17	AY 17/18	AY 18/19
CM 414 Virtual Construction	Create model in BIM	100% of the students earn at least 80%	established for AY 16/17	69%		
CM 422 Computer Applications in Construction/ instructor	Create a schedule using software	80% of students earn at least 80%	89%	89%		
Exit Survey/ Academic Advisor	Question on how well students feel they can accomplish SLO	Greater than 3.5 on scale of 1 to 5	4.0	3.7		

11. Apply basic surveying techniques for construction layout and control.

Where assessed/Who	Assessment item	Performance Criteria	AY 15/16	AY 16/17	AY 17/18	AY 18/19
CM 334 Construction Surveying/ Instructor	Students complete a level loop	90% of students are able to score at least a 90%	SLO not developed	SLO not developed		
Exit Survey/ Academic Advisor	Question on how well students feel they can accomplish SLO	Greater than 3.5 on scale of 1 to 5	3.3	2.9		

7/5/2018

12. Understand different methods of project delivery and the roles and responsibilities of all constituencies involved in the design and construction process

Where assessed/ Who	Assessment item	Performance Criteria	AY 15/16	AY 16/17	AY 17/18	AY 18/19
CM 310 Introduction to the Construction Industry/ Instructor	Student interview papers and exam questions	100% of students score > 80%	98%	94%		
Exit Survey/ Academic Advisor	Question on how well students feel they can accomplish SLO	Greater than 3.5 on scale of 1 to 5	4.2	4.1		

13. Understand construction risk management.

Where assessed/Who	Assessment item	Performance Criteria	AY 15/16	AY 16/17	AY 17/18	AY 18/19
CM 412 Construction practice/ Instructor	Risk analysis of construction project	85% of the student earn at least 85%	100%	95%		
Exit Survey/ Academic Advisor	Question on how well students feel they can accomplish SLO	Greater than 3.5 on scale of 1 to 5	3.9	3.7		

7/5/2018

14. Understand construction accounting and cost control

Where assessed/Who	Assessment item	Performance Criteria	AY 15/16	AY 16/17	AY 17/18	AY 18/19
CM 312 Construction Accounting/ Instructor	Answer a series of 10 questions on a final exam	90% of the students earn greater than 90%	A 55% B 31%	A 90% B 40%		
Exit Survey/ Academic Advisor	Question on how well students feel they can accomplish SLO	Greater than 3.5 on scale of 1 to 5	3.5	3.6		

15. Understand construction quality assurance and control

Where assessed/Who	Assessment item	Performance Criteria	AY 15/16	AY 16/17	AY 17/18	AY 18/19
CM 323 Construction Methods and Materials II/ Instructor	Four laboratory reports are prepared by students	85% of students earn at least 85% on each lab report	83%			
CM 421 Project Management/ Instructor	Series of final exam questions that differential between active and passive QC	80% of students earn at least 80%	A 100% B 78% C 40%	A 100% B 98% C 81%		
Exit Survey/ Academic Advisor	Question on how well students feel they can accomplish SLO	Greater than 3.5 on scale of 1 to 5	3.7	3.6		

16. Understand construction project control processes

Where assessed/Who	Assessment item	Performance Criteria	AY 15/16	AY 16/17	AY 17/18	AY 18/19
CM 434 Lean Project Management/ Instructor	Series of five questions on final exam	85% of students earn at least 80%	Class not offered yet	82%		
CM 411 Construction Planning and Control/ Instructor	80% of students earn at least 80%	80% of students earn at least 80%	89%	86%		
Exit Survey/ Academic Advisor	Question on how well students feel they can accomplish SLO	Greater than 3.5 on scale of 1 to 5	3.6	3.5		

17. Understand the legal implications of contract, common, and regulatory law to manage a construction project

Where assessed/Who	Assessment item	Performance Criteria	AY 15/16	AY 16/17	AY 17/18	AY 18/19
CM 423 Construction law/ Instructor	Students answer case study questions on midterm	100% of students > 80%	SLO tool not developed	95%		
Exit Survey/ Academic Advisor	Question on how well students feel they can accomplish SLO	Greater than 3.5 on scale of 1 to 5	3.6	3.7		

18. Understand the basic principles of sustainable construction

Where assessed/Who	Assessment item	Performance Criteria	AY 15/16	AY 16/17	AY 17/18	AY 18/19
CM 335 Sustainable Construction/ Instructor	LEED Green Associate Exam	At least 90% of students pass exam	98%	100%		
Exit Survey/ Academic Advisor	Question on how well students feel they can accomplish SLO	Greater than 3.5 on scale of 1 to 5	3.6	3.9		

19. Understand the basic principles of structural behavior

Where assessed/Who	Assessment item	Performance Criteria	AY 15/16	AY 16/17	AY 17/18	AY 18/19
CM 420 Temporary Structures/ Instructor	Series of questions on midterm exam	90% of students earn 90%	Missing, SLO not developed	Missing, SLO not developed		
CM 432 Soils and Foundations/ Instructor	Series of questions on midterm exam	90% of students earn 90%	90%	missing		
This SLO was dropped to develop a better structural metric in the CM 420 class						
Exit Survey/ Academic Advisor	Question on how well students feel they can accomplish SLO	Greater than 3.5 on scale of 1 to 5	3.8	3.8		

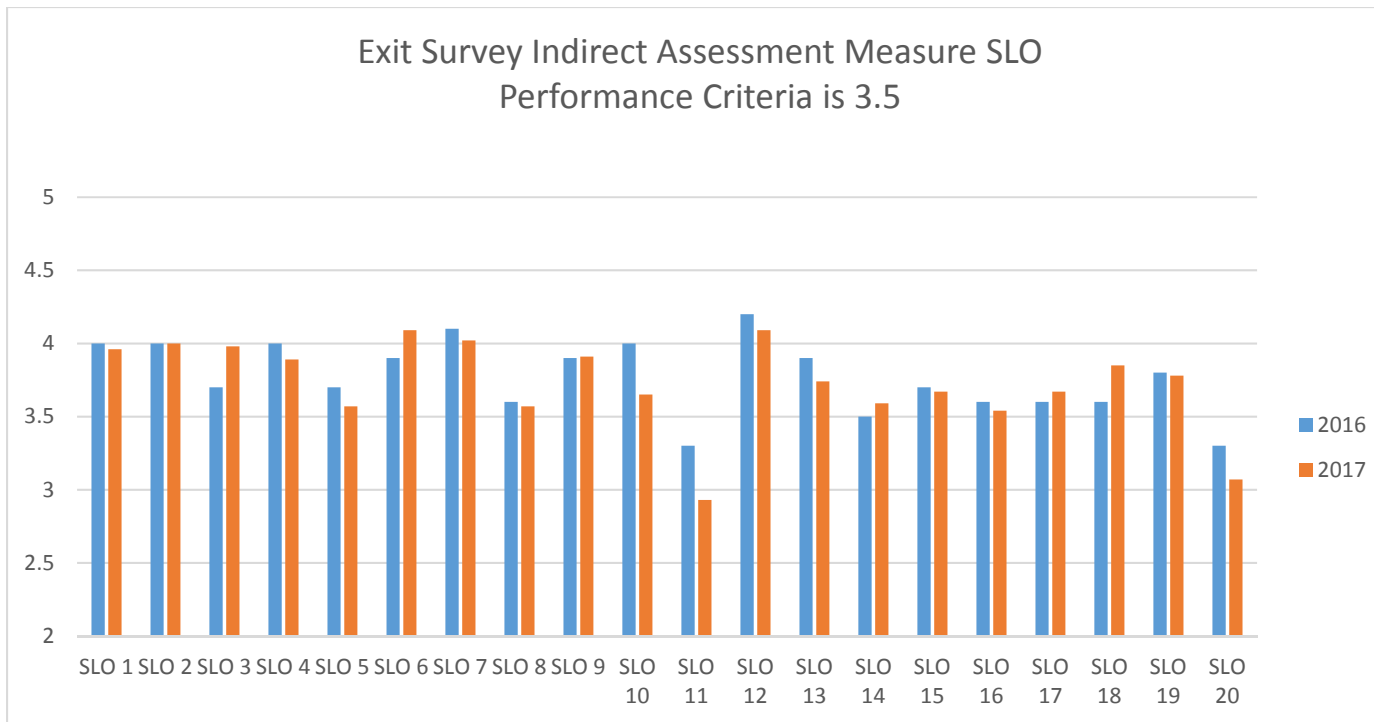
20. Understand the basic principles of mechanical, electrical and piping systems

Where assessed/Who	Assessment item	Performance Criteria	AY 15/16	AY 16/17	AY 17/18	AY 18/19
CM 321 Mechanical Systems in Buildings/ Instructor	Describe characteristics of a mechanical system	85% of students > 90%	SLO developed but missing data	92 %		
CM 322 Electrical Systems in Buildings/ Instructor	Response to RFP assignment	80% of students earn at least 80%	SLO developed but missing data	91%		
Exit Survey/ Academic Advisor	Question on how well students feel they can accomplish SLO	Greater than 3.5 on scale of 1 to 5	3.3	3.1		

7/5/2018

Exit Survey results for AY 2016 to 2017

Class of 2016-2017 Exit Survey



5	Outstanding level of knowledge gained
4	Above average knowledge
3	Just enough skill & knowledge to start work
2	Below expectation for entry level position
1	Not able to perform/Do not understand

7/5/2018

SLO 1: I am able to create oral presentations appropriate to the construction discipline.

SLO 2: I am able to create written communications appropriate to the construction discipline.

SLO 3: I am able to create a construction project safety plan.

SLO 4: I am able to create construction project cost estimates.

SLO 5: I am able to create construction project schedules.

SLO 6: I am able to analyze professional decisions based on ethical principles.

SLO 7: I am able to analyze construction documents for planning and management of construction processes.

SLO 8: I am able to analyze methods, materials, and equipment used to construct projects.

SLO 9: I am able to apply construction management skills as a member of a multidisciplinary team.

SLO 10: I am able to apply electronic-based technology to manage the construction process.

SLO 11: I am able to apply basic surveying techniques for construction layout and control.

SLO 12: I understand different methods of project delivery and the roles and responsibilities of all constituencies involved in the design and construction process.

SLO 13: I understand construction risk management.

SLO 14: I understand construction accounting and cost control.

SLO 15: I understand construction quality assurance and control.

SLO 16: I understand construction project control processes.

SLO 17: I understand the legal implications of contract, common, and regulatory law to manage a construction project.

SLO 18: I understand the basic principles of sustainable construction.

SLO 19: I understand the basic principles of structural behavior.

SLO 20: I understand the basic principles of mechanical, electrical and piping systems.

Exit interview with Department Chair and Academic Adviser. On 22 May 2017 we met with the senior class to discuss what parts of the CM program they liked and what could be improved. After about a half hour only the academic adviser was in the room since some students were in Professors Bender's class and we wanted to develop frank dialogue. Comments are below:

7/5/2018

- Mentorship/Coaching
 - More industry coaching
 - More professional mentorship
 - More connections with alumni
 - More interaction and networking between juniors and seniors
- Classes LIKED
 - Barry's class
 - Perhaps could be prereq, would be nice to visit job sites before entering CM program
 - Liked Structures class, wanted more
 - James' class prepared well for Capstones
 - Like Larry's class, he's a good teacher
- Classes DISLIKED
 - Some classes seemed like they were out of sequence
 - Mech/Elec class work was intensive
 - Dug too deep into the details, not as broad as they would've liked
 - Wanted more info relevant to what they'll actually be doing in industry (more soft skills-focused, like management)
 - Methods & Materials 2 class = mostly just concrete
 - Scheduling class was too-detailed, wanted more of a high-level overview
 - Dave was not a good instructor (unprofessional comments and bad exams)
- Group Projects
 - Too many group projects
 - Too many ppl in groups for some classes
 - People get pigeon-holed into performing the same roles/tasks in groups
- Technology
 - Want more relevant tech/software/Excel preparation
 - Want more instruction in computer tech/software
- Like the balance of academic/industry instructors
- Physics classes were not necessary as prereqs
- The easier 1st year classes should've been prereqs
- DD Arch students don't feel as supported from Arch, Arch "looks down" on them
- More exposure to different concentrations within CM
- Need to market CM more on campus
 - Class visits do not help

3. Assessment Implementation Plan

Assessment evaluation data was due to the department chair by the 15th of each month after a quarter ends, except for spring when it is due on 15 June. The senior exit survey was conducted as part of the CM 412 Construction Practices class and results were made available by 15 June 2017. The department chair collated the program assessment data and degree program objectives data for review at both an autumn faculty and Construction Industry Advisory Council (CIAC) meeting. Recommendations, improvements, corrective actions, and changes will be recorded and reflected in future appendix (C) to this document.

4. Chairs findings and recommendations:

AY 2016/7 was really our first year of collecting data after significant changes to our assessment plan.

Big Picture

The entire degree program assessment plan was modified and we seem to be collecting the right quantity information. However some minor concerns exist. Specifically:

Are we collecting data that will do us any good?

From the information we have captured, does this tell us what and where to improve the program?

Some of the very narrow snapshots of specific topics were removed.

Are we performing too many direct assessments?

Last year I recommended we only provide two direct assessments for the highest level of Blooms taxonomy of create, SLOs 1-5 (Written, oral, safety, estimating, and scheduling), and SLO 20 MEP (1 elect + 1 mech). This will provide a picture of the most meaningful and highest level of data. However, a review of the faculty determined only one direct assessment was needed for writing, oral, and that methods, teamwork, technology, QC, controls, and structures all need two direct assessments.

Are the assessments capturing the level of student learning required?

All SLOs were reviewed to ensure they are being assessed to the level of Bloom's taxonomy.

How we collect data has been fixed.

Katherine McDermott, the department administrator set up google documents that faculty input data and comments to spreadsheets. The Chair only needs to remind faculty of the requirement and provide them with a link.

7/5/2018

- Are we following ACCE guidelines?

For the most part...

An area that needs review and most likely needs to be strengthened or updated is: “Provide an index, cross-tab, curriculum map, or other form of summary clearly relating Course Learning Outcomes (CLO) to Program Learning Outcomes (PLO) and, further, to the Student Learning Outcomes (SLO).” In the QIP we have the PLOs/ SLOs mapped to the specific courses. As an appendix to the QIP, CLOs are mapped to which SLO/PLO they support, this needs to be reviewed and updated.

- Missing SLO development and data collection

Still some minor issues with this...takes some faculty a few prompts to input data

Some courses have started with new affiliate faculty member and the SLO did not get incorporated into the course yet.

SLO Direct Assessment tools completed/ required: 29/30, as of September 2017

SLO Direct Assessment data collected: 35/46,

Note data collected is higher the number of direct assessments because of some classes having multiple sections taught by different instructors or during different quarters.

- Performance level accomplishment or trends

A review of the data collected reveals:

Direct assessment data collected all the performance criteria were met except:

SLO 1 write, for 2 sections, 2nd year, CM 301

SLO 6 ethics for 2nd year, CM 412

SLO 7 docs for one section for 2nd year, CM 311

SLO 9 Teams, CM 313

SLO 10 Technology, CM 414

SLO 14 Acct, one section for 2nd year, CM 312

Writing, Ethics, documents, and accounting SLO should be reviewed for improved student learning.

Of the indirect assessment data collected 2/20 did not performance criteria established. It appears students do not feel they can apply basic surveying for construction layout and do not understand basic principles of electrical and mechanical systems.

7/5/2018

Appendix A Historical Program Outcome Data AY 2016/17

		1 WRITE	2 ORAL	3 SAFE	4 EST	5 SCH	6 ETHIC	7 DOCS	8 METHOD	9 MULIT TEAM	10 TECH	11 SURVEY	12 DELIVERY	13 RISK	14 ACCT	15 QC	16 CONTROL	17 LAW	18 SUSTAIN	19 STRUCT	20 MEP
CM 301	Write	DA																			
CM 310	Intro												DA								
CM 311	Docs							DA													
CM 312	Acct														DA						
CM 313	Meth									DA											
CM 321	Mech																				DA
CM 322	Elect																				DA
CM 323	Meth 2								DA							DA					
CM 332	Equip								DA												
CM 331	Est 1				DA																
CM 333	Safe			DA																	
CM 334	Survey											DA									
CM 335	Sustain																			DA	
CM 410	Est 2				DA																
CM 411	Sched					DA											DA				
CM 412	Practice						DA							DA							
CM 414	Virtural											DA									
CM 420	Temp Str																				DA
CM 421	PM															DA					
CM 422	Comp App										DA										
CM 423	Law																	DA			
CM 431	Capstone		DA	DA		DA															
CM 432	Soils																				DA
CM 434	Lean																DA				
ARCH 321	Structures									DA											
Exit Survey		IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA	IA

≥ Performance criteria,
< Performance criteria,
Missing SLO tool,
Missing SLO data

7/5/2018

Degree Program Objectives Data 2015-2020

	2015/6	2016/7	2017/8	2018/9	2019/0
Students Admitted	70	60			
Transfer Students Admitted	11	11			
Placement Rate *	83%	87%			
Average Starting Salary	\$62.5K	\$64.25K			
ACCE	F1	F2			
Internships	66	59			
Lab or Field learning	2	3			

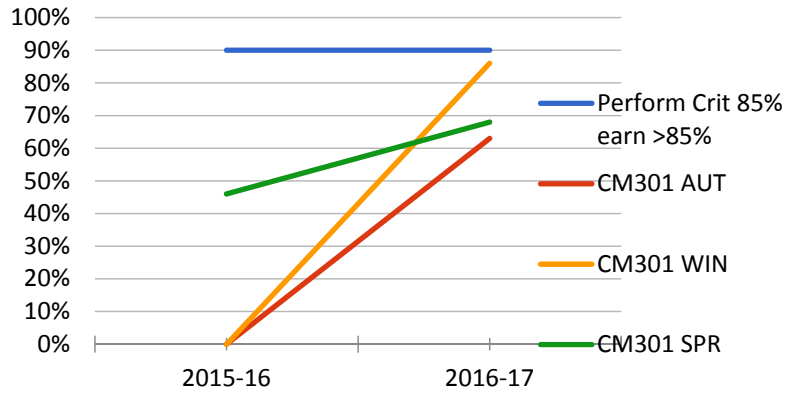
* At time of exit survey

F1 Completed 3 year report to ACCE

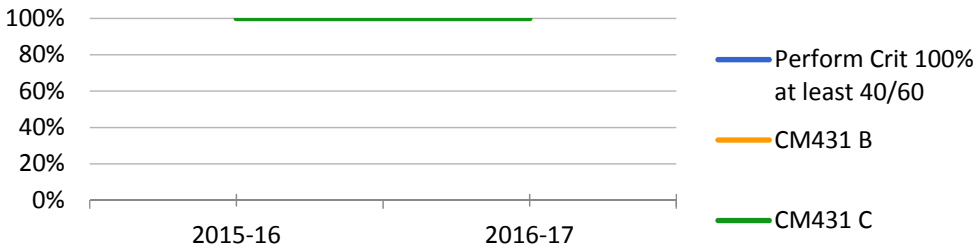
F2 ACCE approved 3rd year report

Appendix B
Historical SLO Data

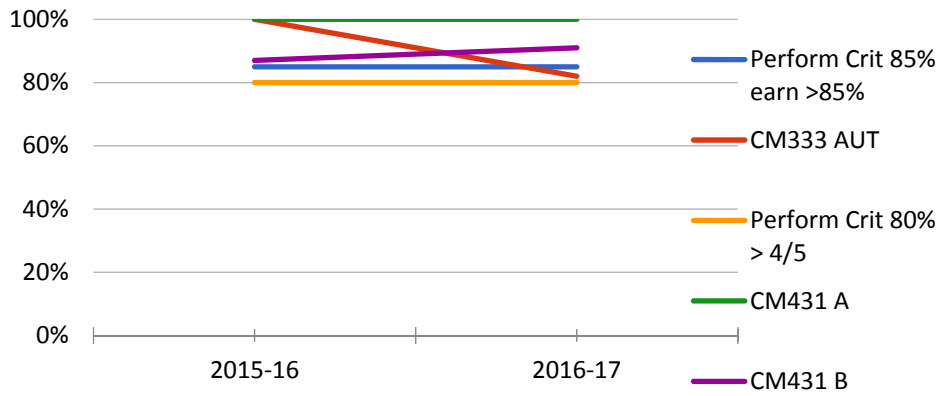
SLO 1: Create written communications



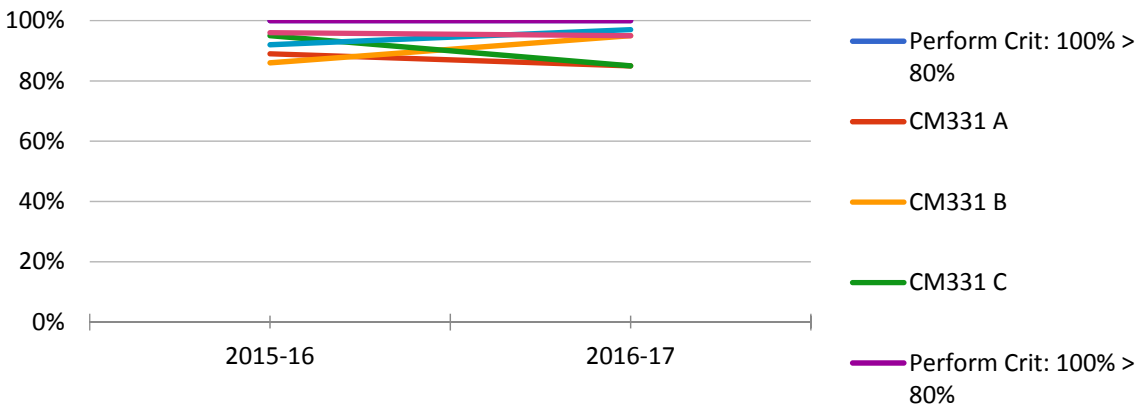
SLO 2: Create oral presentations appropriate to the construction discipline

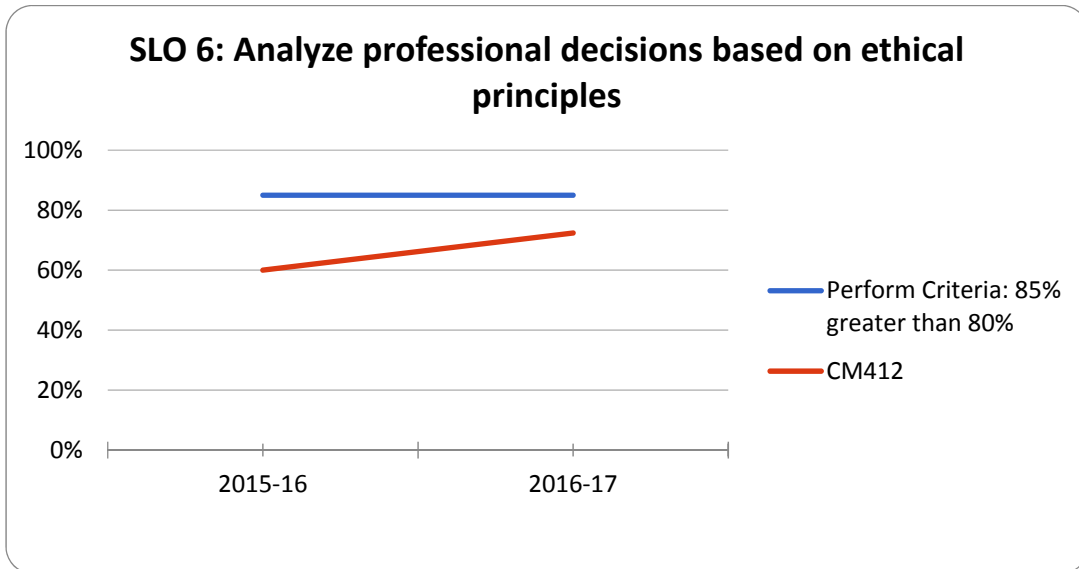
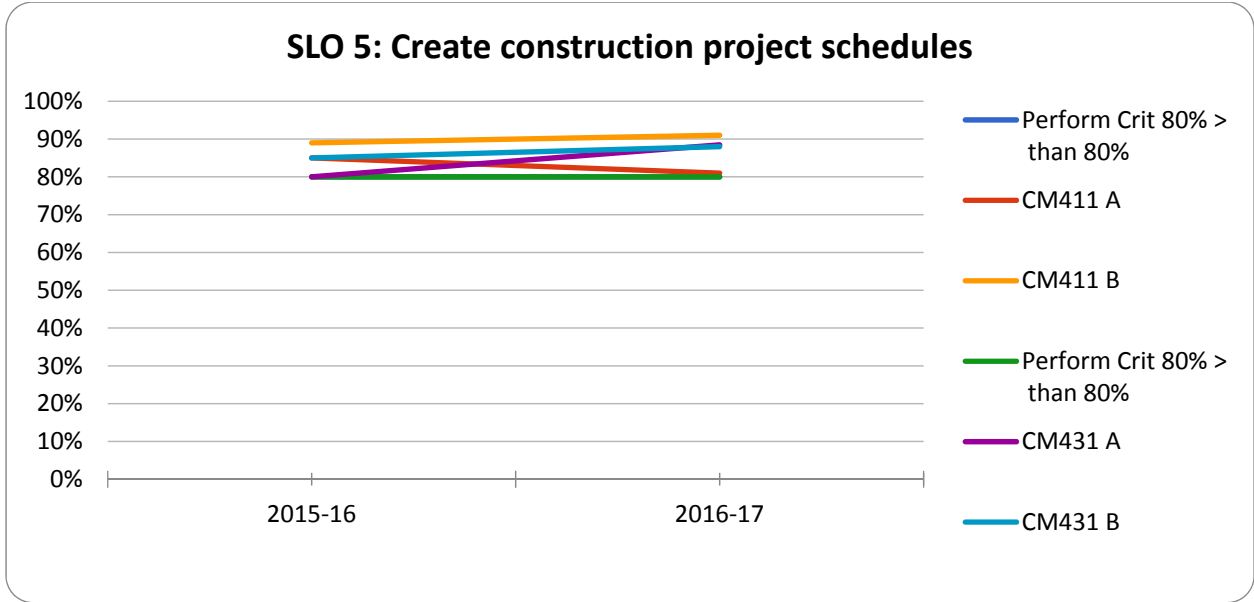


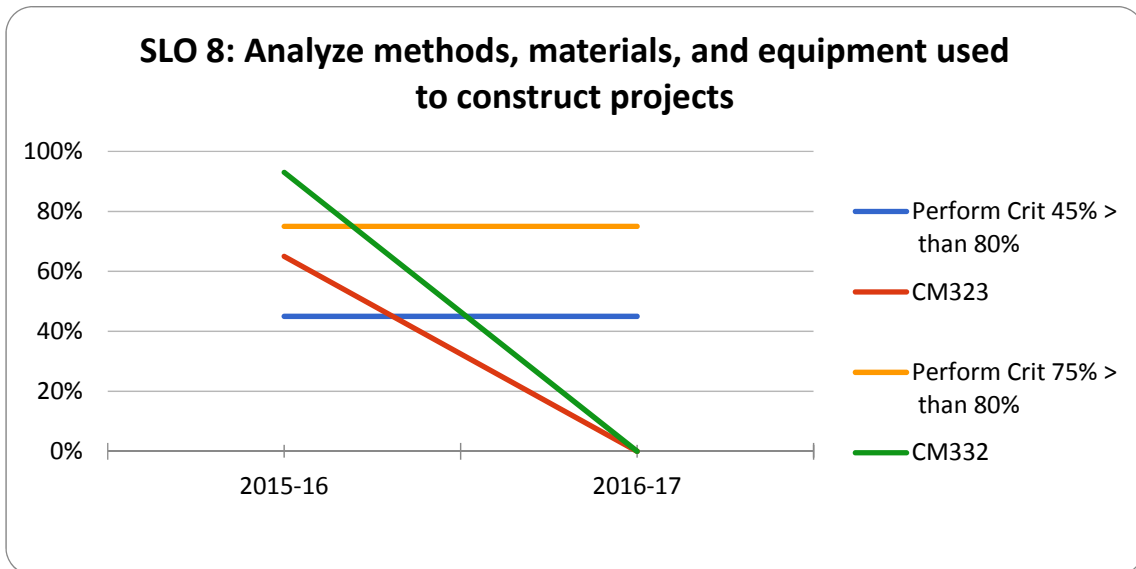
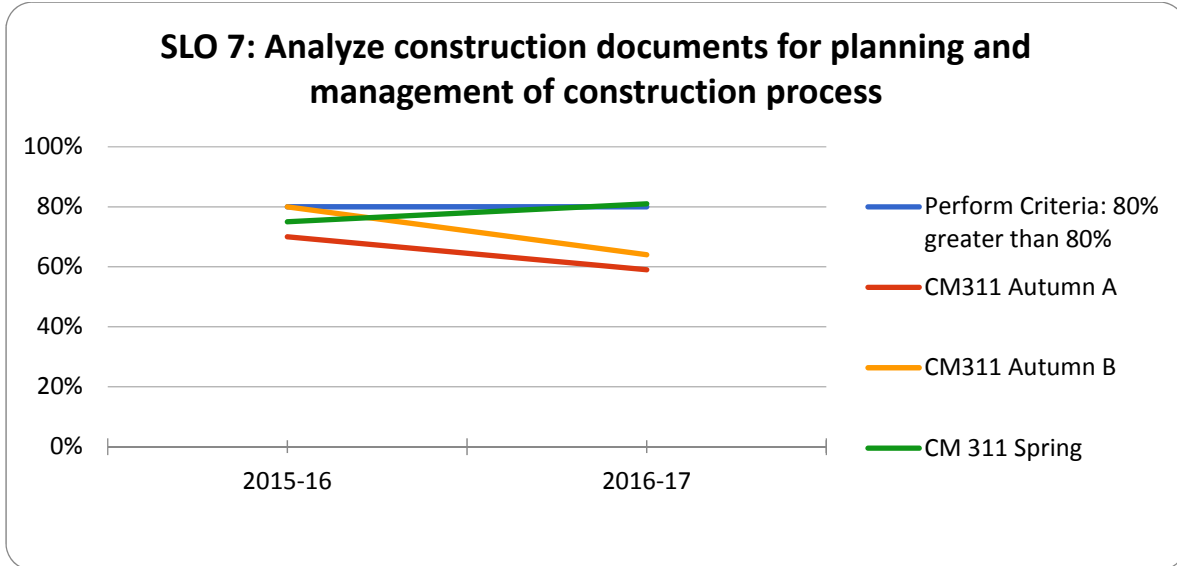
SLO 3: Create a construction project safety plan

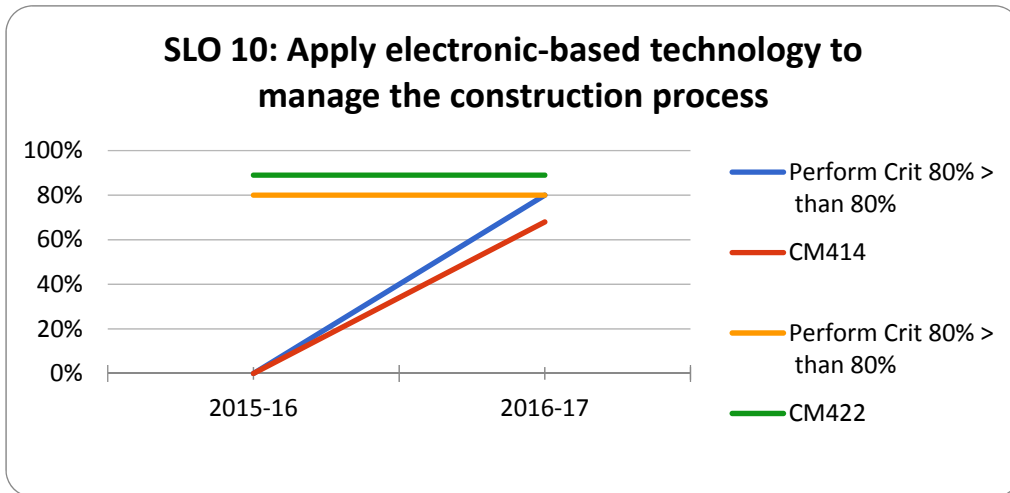
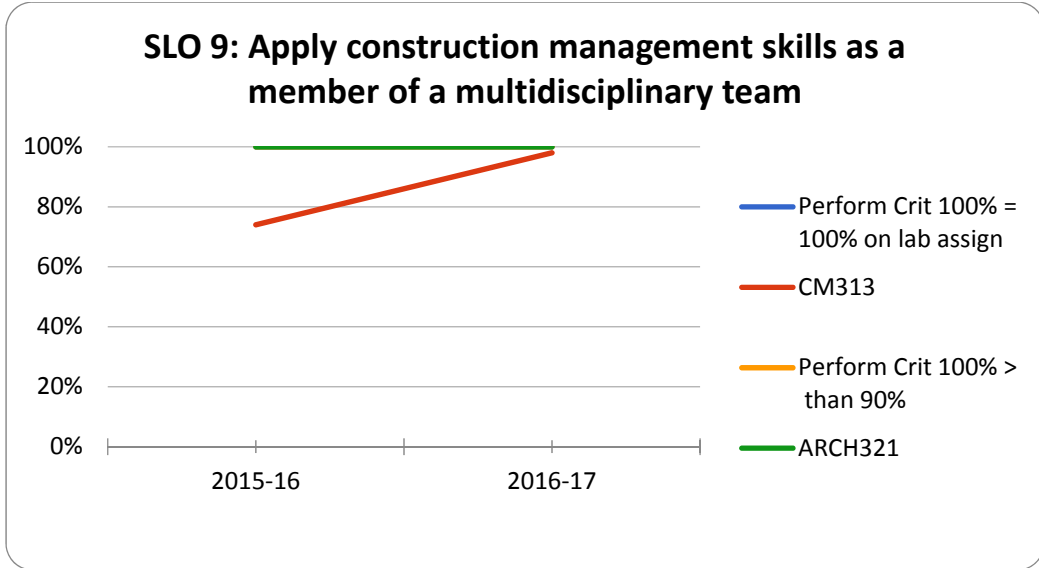


SLO 4: Create construction project cost estimates

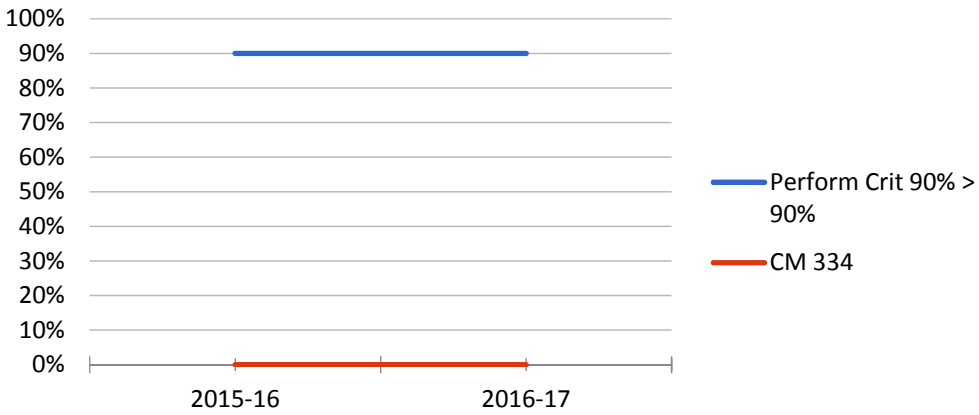




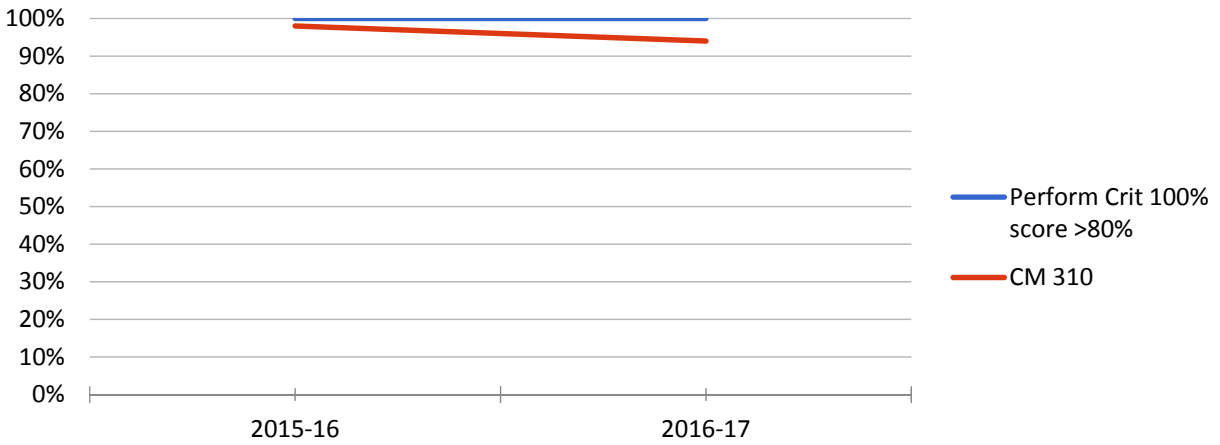


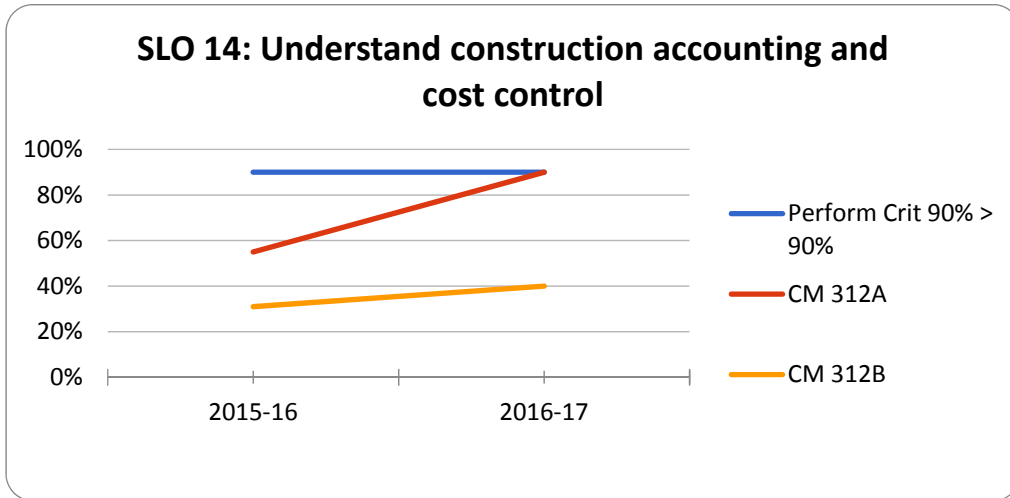
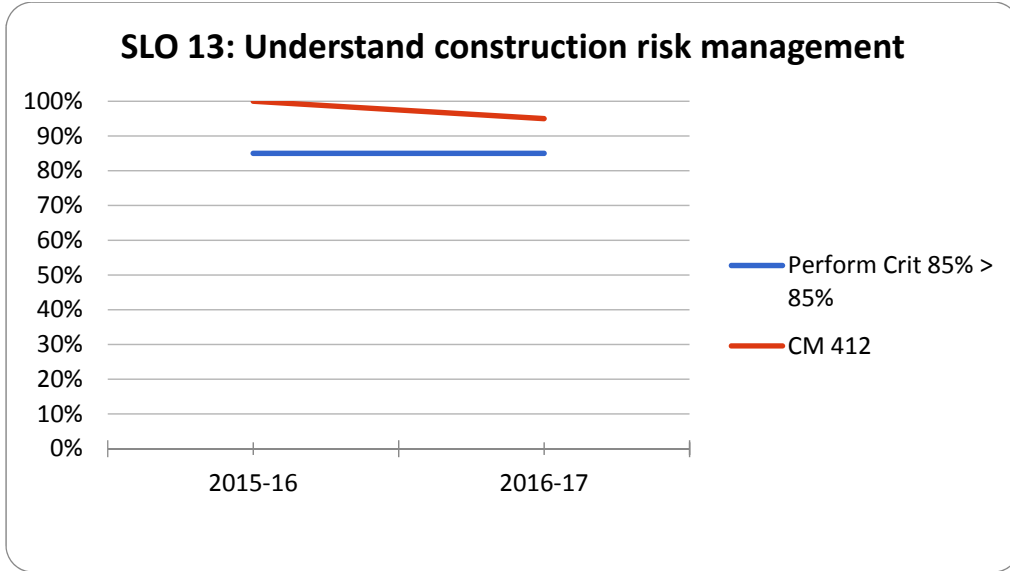


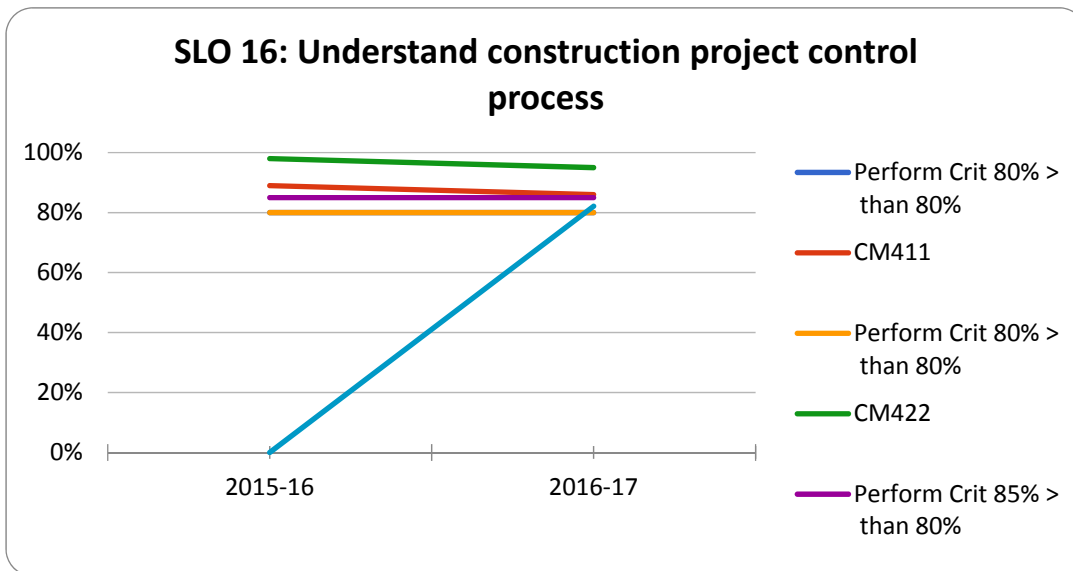
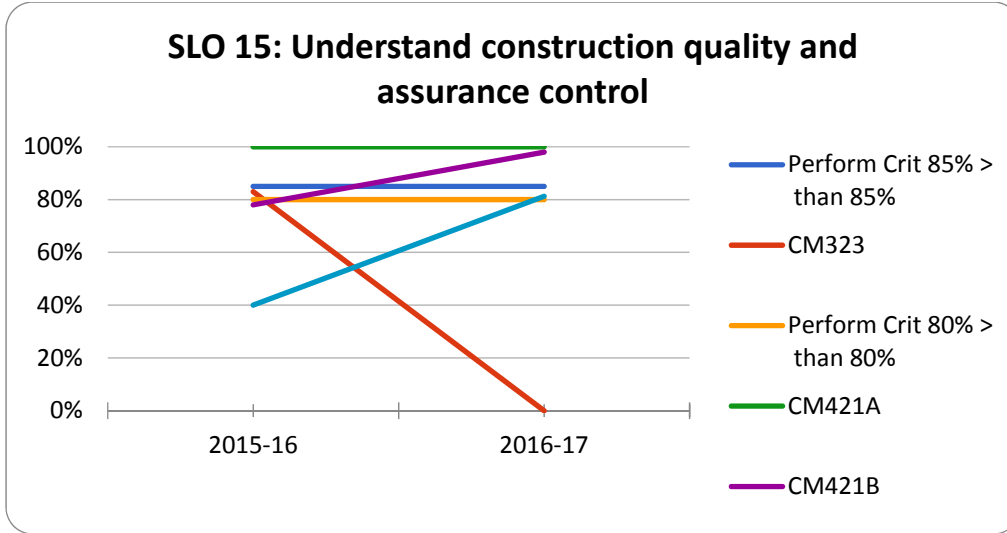
SLO 11: Apply basic surveying techniques for construction layout and control



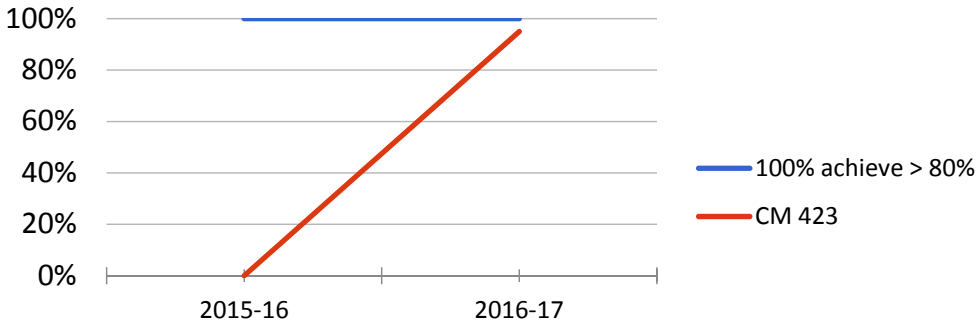
SLO 12: Understand different methods of project delivery and the roles and responsibilities of all constituencies involved in the design and construction process



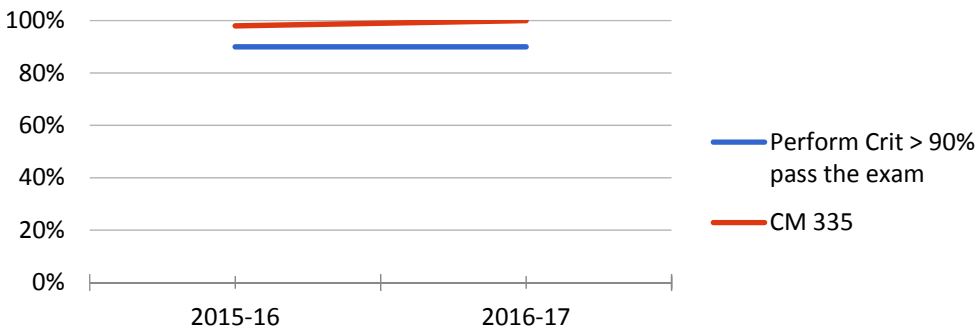




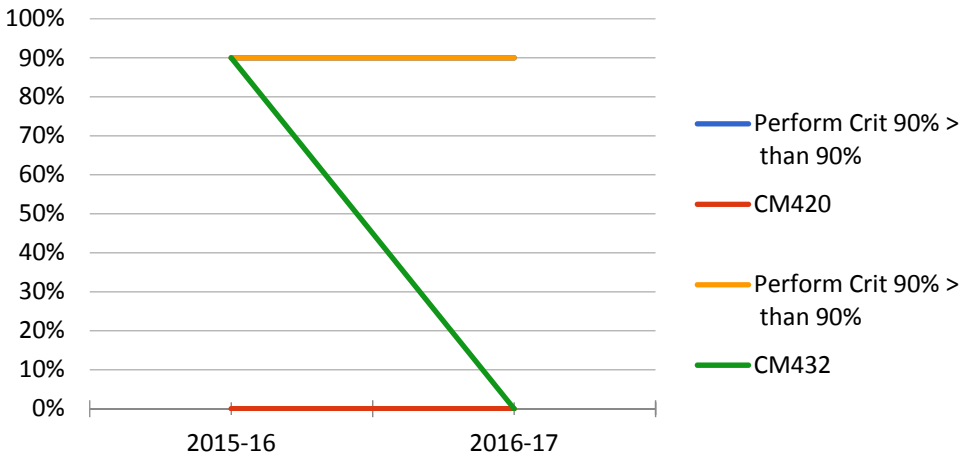
SLO 17: Understand the legal implications of contract, common, and regulatory law to manage a construction project



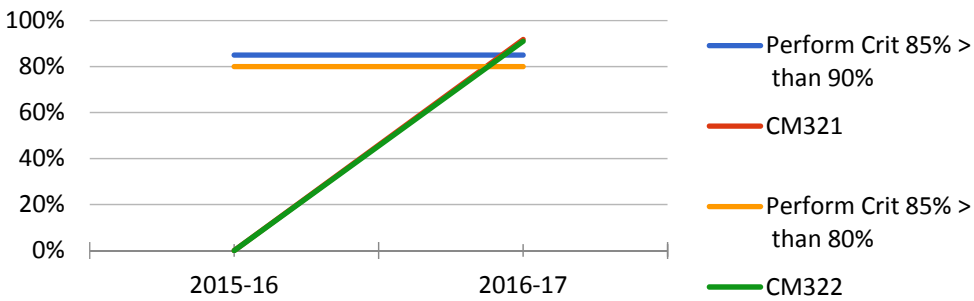
SLO 18: Understand the basic principles of sustainable construction



SLO 19: Understand the basic principles of structural behavior



SLO 20: Understand the basic principles of mechanical, electrical, and piping systems



Appendix C Faculty review and recommendations

At the faculty retreat on 20 September 2017 the faculty reviewed the end of year report and each SLO in detail. Additionally full time and part time faculty met for a working lunch and described the course learning outcomes of their classes. Course syllabuses were reviewed and made consistent.

Overall

The department now has in most cases two years' worth of data. Most SLOs are being accomplished and meet performance levels. A few SLOs need attention and will be discussed in further detail.

SLOs 11 and 19 (CM420) tools need to be developed.

Missing SLO data from CM 323 and 332. CM 432's SLO will be dropped since better data can be obtained from CM 420. The SLO from the ARCH 320 class will be dropped since data collection is problematic due to inconsistency.

Specific SLO's not meeting performance levels

SLO 1 Write

This is the first year we have data from all sections. It appears students are not meeting the standard. It was agreed that the department chair needed to meet with the faculty involved in this class to review the assessment assignment, grading rubric and assignments.

SLO 6 Ethics

The assignment that measures this learning is the AGC case study. Students need to analyze the case and write a paper based on the case. It appears the students are not meeting the performance standard. Students that are failing to meet the standard are not completely explaining their answers and appear to put in an unacceptable level of effort. The assignment may be due during a major capstone assignment and will be move to earlier in the quarter. The assessment assignment will be reviewed to answer fewer questions but with a higher level of quality.

SLO 7 Documents

The assessment is performed during the final examination. There are 100 questions, open book, and it appears the lower scores are from not completing the exam within the allotted time. The autumn instructor seemed to feel poor students were to blame, the performance standard was at the correct level. Capstone instructors did feel the students do have document reading/ analyzing skills during their senior year.

SLO 10 Technology

The assessment piece from CM 414 only has one year's worth of data. Discussion indicated the assessment focused in applying BIM software to estimating and some of the failure to achieve the performance standard was related to estimating skills. Future assessment will focus more on the technology by using the entire exam as an assessment tool.

SLO 11 Surveying

7/5/2018

An indirect assessment from the students indicates they do not feel they have the knowledge expected from the surveying SLO. There have been instructor issues from this class, in Spring 2018 a new instructor is being hired and a new assessment tool will be developed.

SLO 14 Accounting

One section was below the performance standard for a second year in a row. The instructor of the sections that meet the performance standard will teach both sections in the future.

SLO 19 Structural

One SLO was dropped from the Soils class. The SLO's reliability was questioned and it was felt CM 420 temporary structures would provide more meaningful data.

SLO 20 MEP

An indirect assessment from the students indicates they do not feel they have the knowledge expected from the MEP SLO. The department chair is working with the four MEP instructors to improve learning in this class. A new book is being considered, new field trips planned and different plan sets for exercises.

CIAC review and recommendations

The results were shared with CIAC on 9/29/17 and CIAC curriculum committee. CIAC was concerned with writing and technology. They understood SLO performance goals and were interested in trends when more data was available.

The council suggested a renewed emphasis on writing and other soft skills such as teamwork and speaking. The department chair plans to meet with the faculty that teach this course to determine exercises or learning experiences that could help students write better. The department chair will also emphasize speaking and team exercises in our classes.

CIAC recognized the need for technology skills and applauded our efforts to include BIM as a mandatory course. They agreed the SLO should be comprehensive in applying technology tools.