University of Washington
Department of Construction Management
Academic Quality Improvement Plan Report for AY 2017/8
Bachelor of Science in Construction Management Program

This report highlights the findings of the AY 2017/8 assessment cycle. It serves as the basis for the faculty and the Construction Industry Advisory Council (CIAC) review during the fall of 2018. 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 2015. 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 **2018: 66**
- Number of transfer students admitted each year, > 25%: **2018: 17%**
- Placement rate of graduates, > 95%, **98%**
- 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

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 against the standard of the program's performance criteria. Individual assessment tools for specific SLOs are found in their respective notebooks.

The program's performance assessment 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 (2017/18)

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					
CM 417	R PM																				
CM 422	Comp App										DA										
CM 423	Law																	DA			
CM 431	Capstone		DA	DA		DA															
CM 434	Lean																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	100% of the students will earn greater than 80%	A Missing W Missing S 46%	A 63% W 86% S 68%	A 70% W not offered S84%	
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	4.1	

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% C not offered	A 100% B 94% C 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	4.0	3.5	4.0	

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%	57%	
CM 431 Capstone/ Instructor	Site specific hazard analysis plan	80% of students score greater 80%	A 100% B 87% C 85%	A 100% B 91% C not offered	A 100% B 92% C 52%	
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	3.9	

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%	A 97% B 93% C 97%	
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%	A 94% 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	4.0	3.9	4.0	

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%	A 88% B 81%	
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% C not offered	A 100% B 85% C 83%	
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	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%	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	3.9	4.1	3.9	

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%	A 76% B 72% C 76%	
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	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	60% of the students earn at least 80%	65%	45%	61%	
CM 332 Construction Equipment Management/ Instructor	Series of calculation on a midterm exam to find the quantities, cycle times and number of trips	80% of students earn greater than 80%	93%	99%	58%	
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	3.7	

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	98%	97%	
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	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	80% of the students earn at least 80%	established for AY 16/17	69%	83%	
CM 422 Computer Applications in Construction/ instructor	Create a schedule using software	80% of students earn at least 80%	89%	89%	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	4.0	3.7	3.9	

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	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	3.3	2.9	3.1	

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	80% of students score > 80%	98%	94%	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	4.2	4.1	4.0	

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%	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	3.9	3.7	3.7	

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%	A 34% combined sections	
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	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%	71%	91%	
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%	A 96% B 88% C 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	3.7	3.6	3.8	

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	80% of students earn at least 80%	Class not offered yet	82%	80%	
CM 411 Construction Planning and Control/ Instructor	80% of students earn at least 80%	80% of students earn at least 80%	89%	86%	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	3.6	3.5	3.6	

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%	77%	
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	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%	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	3.6	3.9	3.6	

19. Understand the basic principles of structural behavior

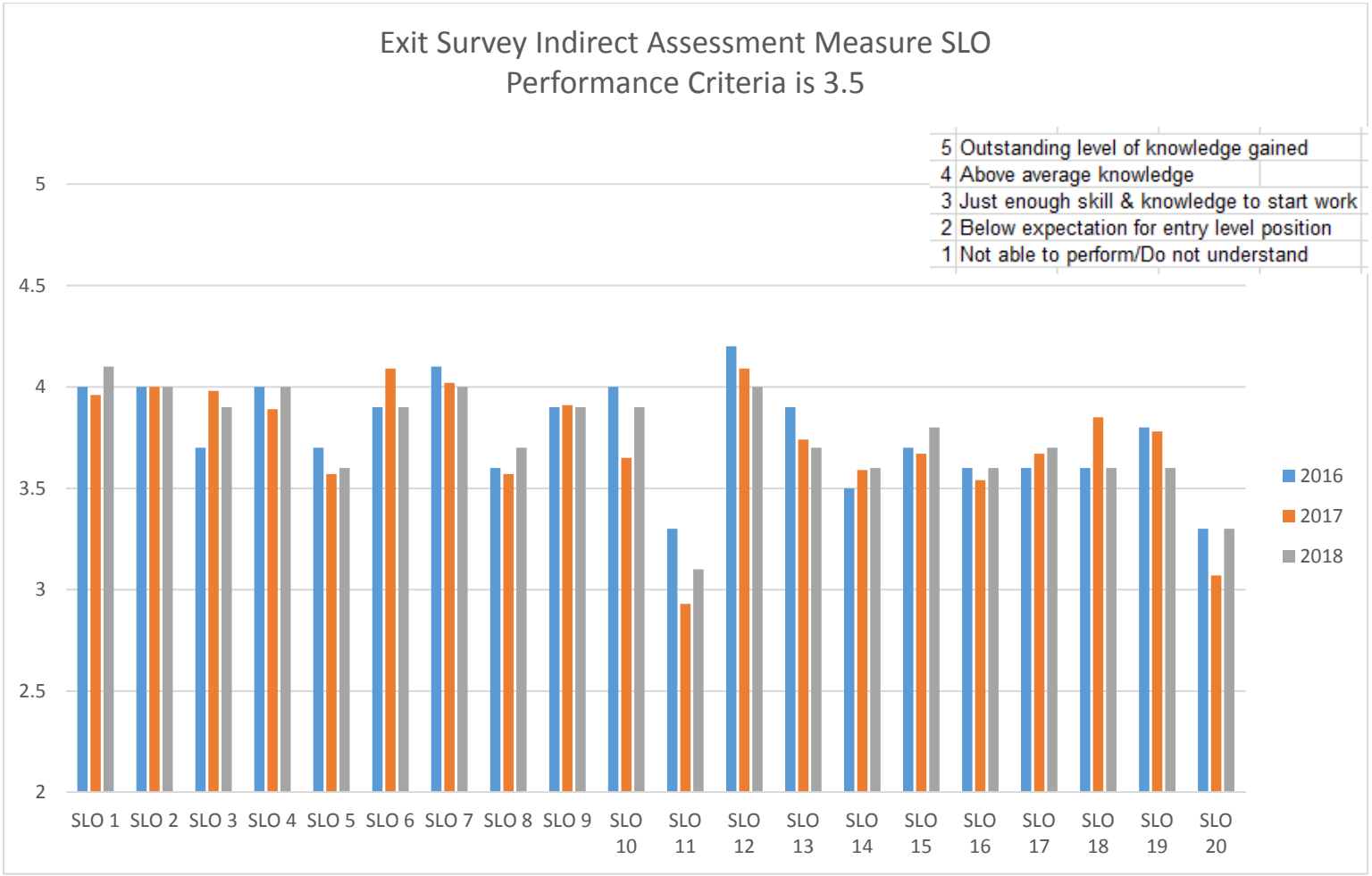
Where assessed/Who	Assessment item	Performance Criteria	AY 15/16	AY 16/17	AY 17/18	AY 18/19
CM 420 Temporary Structures/ Instructor	Series of questions on midterm exam	100% of students earn 70%	SLO not developed	SLO not developed	84%	
Exit Survey/ Academic Advisor	Question on how well students feel they can accomplish SLO	Greater than 3.5 on scale of 1 to 5	3.8	3.8	3.6	

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	80% of students > 90%	Missing data	92 %	94%	
CM 322 Electrical Systems in Buildings/ Instructor	Response to RFP assignment	80% of students earn at least 90%	Missing data	91%	84%	
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	3.3	

Exit Survey results for AY 2016 to 2018

Class of 2017-2018 Exit Survey



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 2 May 2018 we met with the senior class to discuss what parts of the CM program they liked and what could be improved. After about an 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:

Reno competition:

- Need more prep for comp teams, want to learn more about the actual competition in Reno—maybe more practice problems
- Want more resources for Reno, ex: sponsored clothing/gear, more industry mentorship for teams
- Need to have more juniors on teams

Curriculum:

- Want to take CEE/CBE classes as electives
- MGMT 300 not useful
    - Would like to be able to enroll in other MGMT 300 sections, not just CM one
- Want to take more business classes (ex: Negotiations)
- Want to learn more Excel. Want to take Excel Certificate via Foster
- Most applicable class = Project Management
- Residential class = too heavy workload for number of credits
- Didn't learn to do soil reports/ read boring logs
- Intro to Constr. Class = too repetitive, not helpful
- Electrical/Mech classes = too long days, move classes to different days, move to after Estimating
- Enjoy guest lectures in Estimating

Instructors:

- All instructors should use Canvas
- Favorites: Len, Larry, Rob, Aziz, Kamran
- Dislike:
    - Todd – Superintendent class: bad exam wording, not timely grading
    - James – not standard grading, unfair grading
- Did not understand Ken Yu's Ethics class. Content was "all over the place." Want to learn more about Labor Relations
- Dual degree students complained about Carrie's unresponsiveness/unavailability
- Liked Carrie's BIM class

Capstone:

- Want better handbooks with specific deliverables and more consistency with key terms/deliverables
- Printing for Capstone is expensive. Support from dept?

Other:

- Have a class set of RS Means and BlueBeam
- More marketing to younger students. Found out about CM too late in college career
- Grad students take all food and interview slots at company presentations

Positives:

- Great job opportunities
- Internship opportunities
- No school on Fridays!
- Loved site visits
- Like industry instructors
- Enjoy lab classes, want more of them

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 2018. The department chair collated the program assessment data and degree program objectives data for review at both an autumn faculty meeting and the 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 2017/18 was our third year of collecting data since significant changes to our assessment plan were made.

Big Picture

There were some slight changes to the degree program assessment plan. It appears we are hitting our stride on the appropriate items to collect data on. Trends are being established.

- Are we following ACCE guidelines?

For the most part, yes, but the routine collection of data is still difficult at times

- SLO development and data collection

Still some minor issues with this; it takes some faculty a few prompts to input data or we have lapses due to change in faculty
SLO Direct Assessment data collected: 34/34
SLO Indirect Assessment data collected 20/20

- 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 Writing, improving
SLO 2 Oral, very slight down tick this past year
SLO 3 Safety, down this year

SLO 4 Estimating, good
SLO 5 Scheduling, good
SLO 6 Ethics, vast improvement
SLO 7 Documents for 2nd year below performance expectations but improving
SLO 8 Methods did not meet performance expectations in in the equipment class
SLO 9 Interdisciplinary, good
SLO 10 Technology, not meeting performance expectations for second year in CM 414
SLO 11 Survey, 1st year for direct assessment tool and results, but looks good
SLO 12 Delivery, not meeting performance expectations for second year, significant drop off
SLO 13 Risk, good
SLO 14 Acct, still not meeting performance requirements, 2nd year, huge drop off
SLO 15 Quality, good
SLO 16 Control, good except not quite meeting performance expectations in CM 434 class
SLO 17, Law, below performance expectations
SLO 18, Sustainability, performance goal was 90% achieved 89%
SLO 19 Structural, good
SLO 20 MEP, good

Some SLOs have a performance criteria that 100% of the students will earn an X%. We do not meet our performance requirement for several of these and need to consider improvements. Our standard of 100%, while a noble goal, may never be achieved. Nevertheless, we should keep trying to improve, similar to the construction industry's goal of zero time lost due to safety.

SLO 7 Documents, a new book with lots of exercises has been adopted
SLO 14 Accounting, this class has been moved to the student's senior year

Indirect assessment data collected; 2/20 did not meet 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. Changes were made in AY 2017/18, the effect of these changes are not reflected in this data, since the students performing the exit survey are seniors and had these two classes as juniors two years ago. These two areas of indirect assessment need to be monitored.

Appendix A
Historical Program Outcome Data AY 2017/18

		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
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CM 431	Capstone		DA	DA		DA															
CM 434	Lean																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**

Degree Program Objectives Data 2015-2020

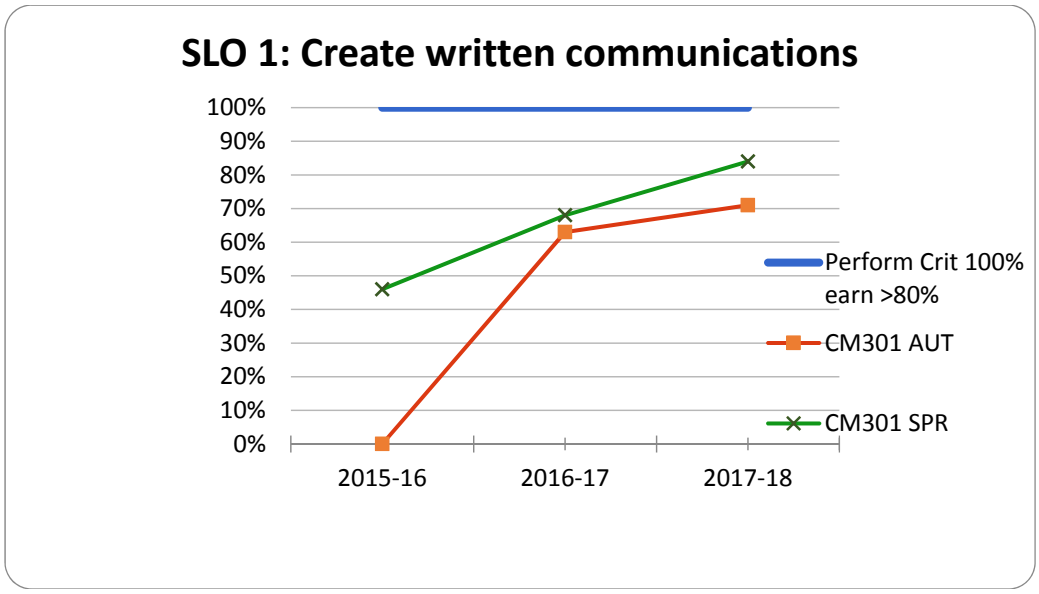
	2015/6	2016/7	2017/8	2018/9	2019/0
Students Admitted	70	60	69		
Transfer Students Admitted	11	11	12		
Placement Rate	83%*	87%*	98%*		
Average Starting Salary	$62.5K	$64.25K	$65.1K		
ACCE	F_1	F_2	F_2		
Internships	66	59	56		
Lab or Field learning	2	3	3		

* At time of exit survey, antidotal evidence points toward 100%

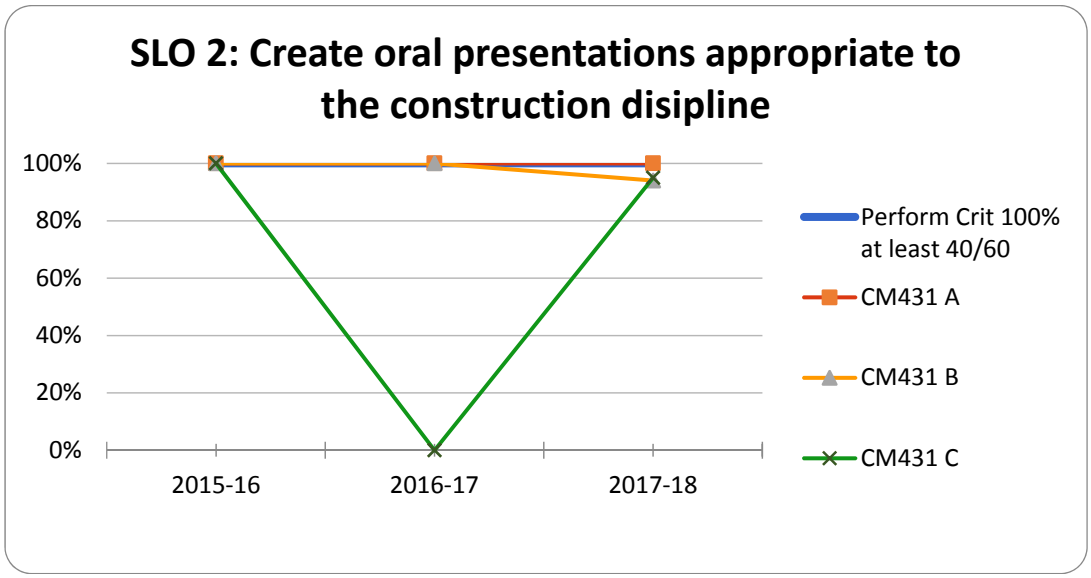
F_1 Completed 3 year report to ACCE

F_2 ACCE approved 3rd year report

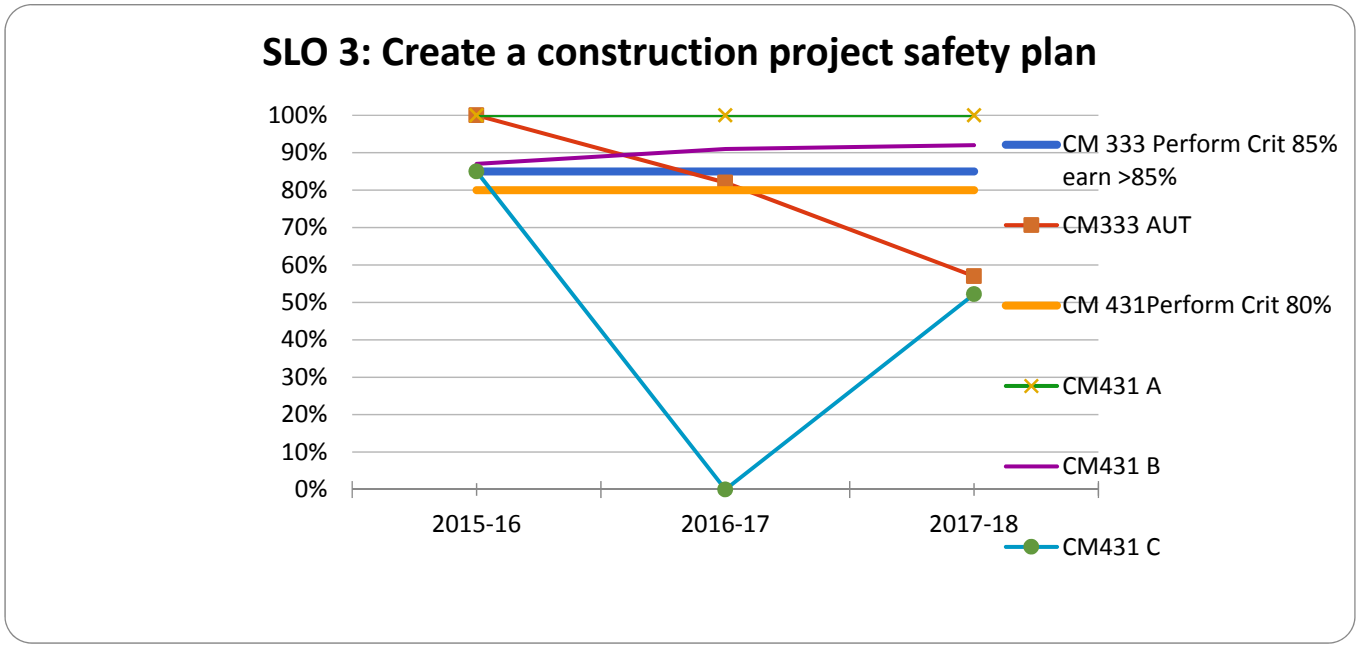
Appendix B
Historical SLO Data



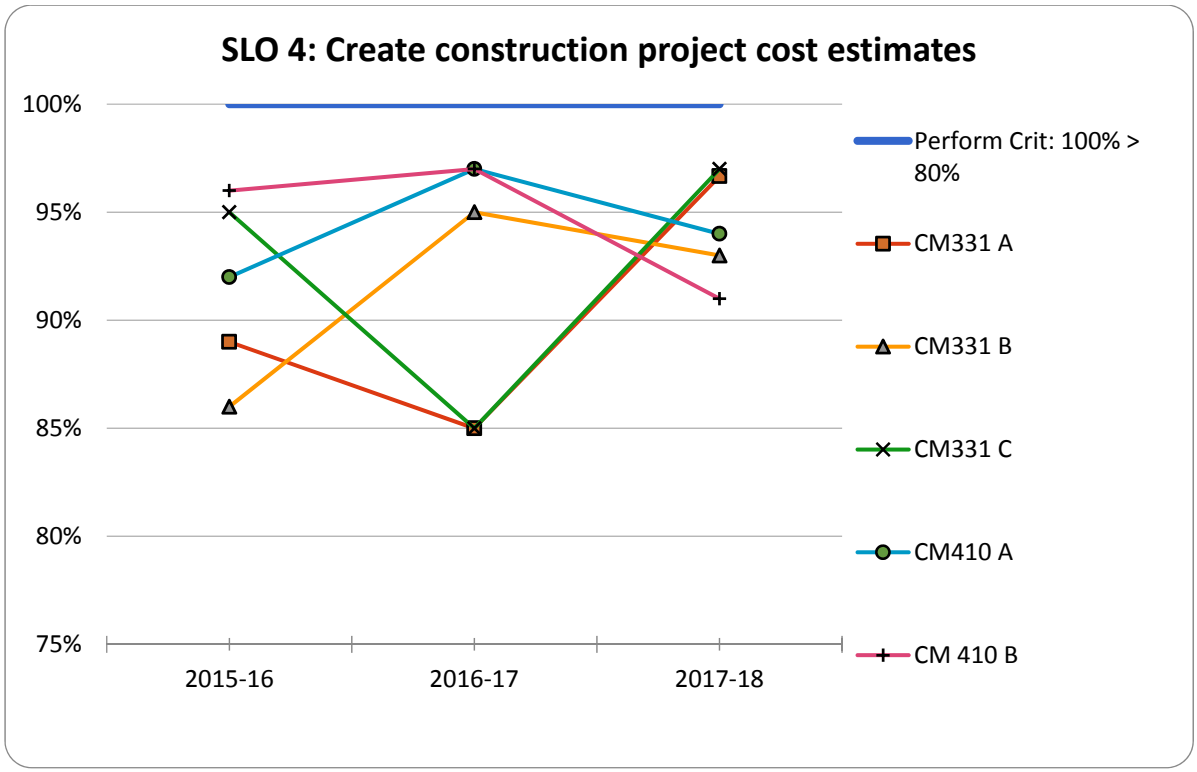
Data was not available for CM 301 Autumn 2015-16

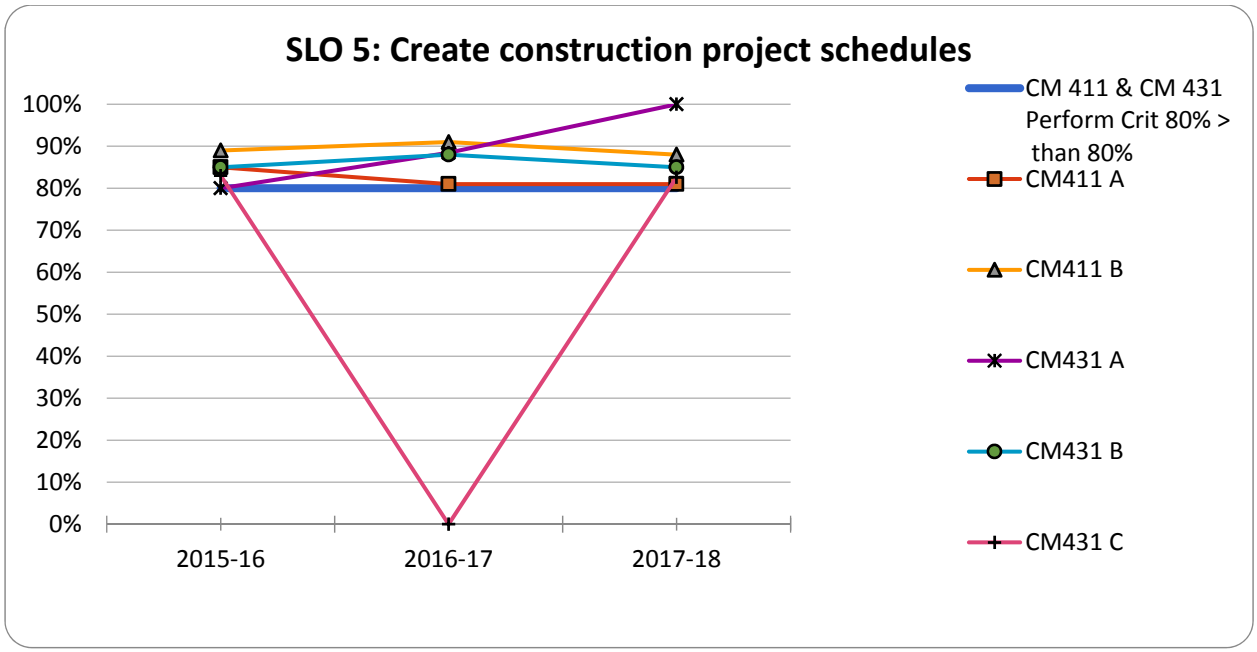


CM 431 C was not offered in 2016-17

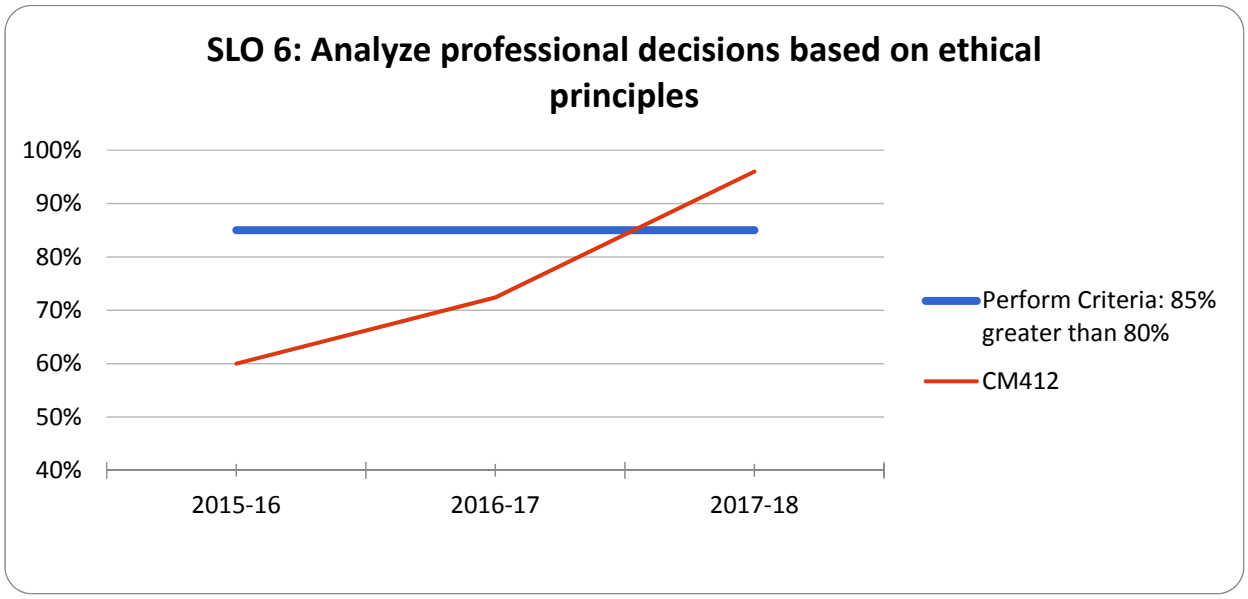


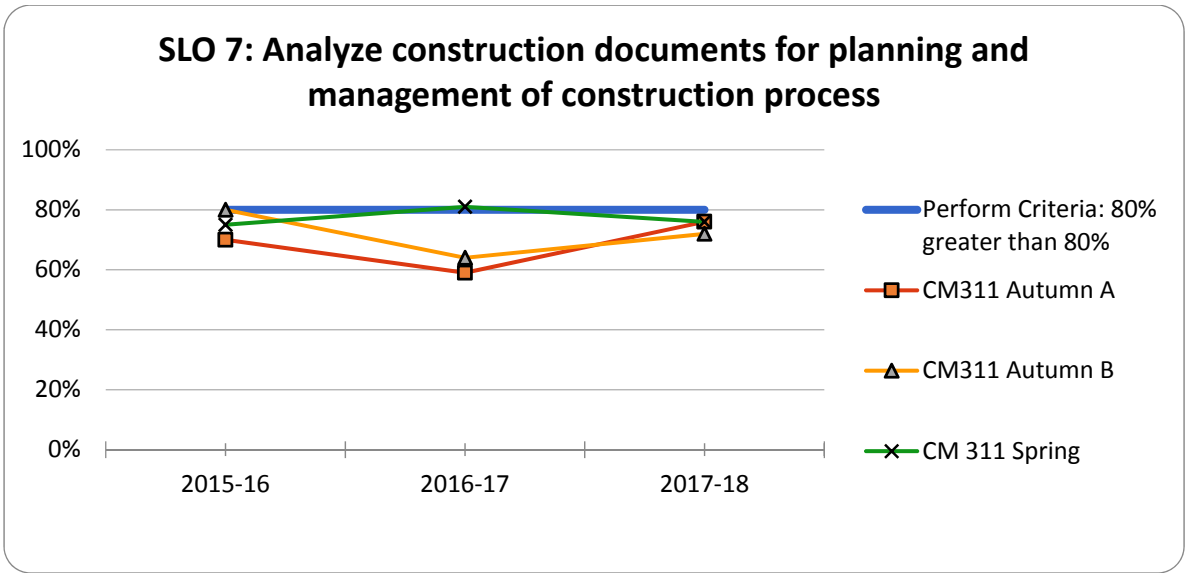
CM 431C was not offered 2016-17

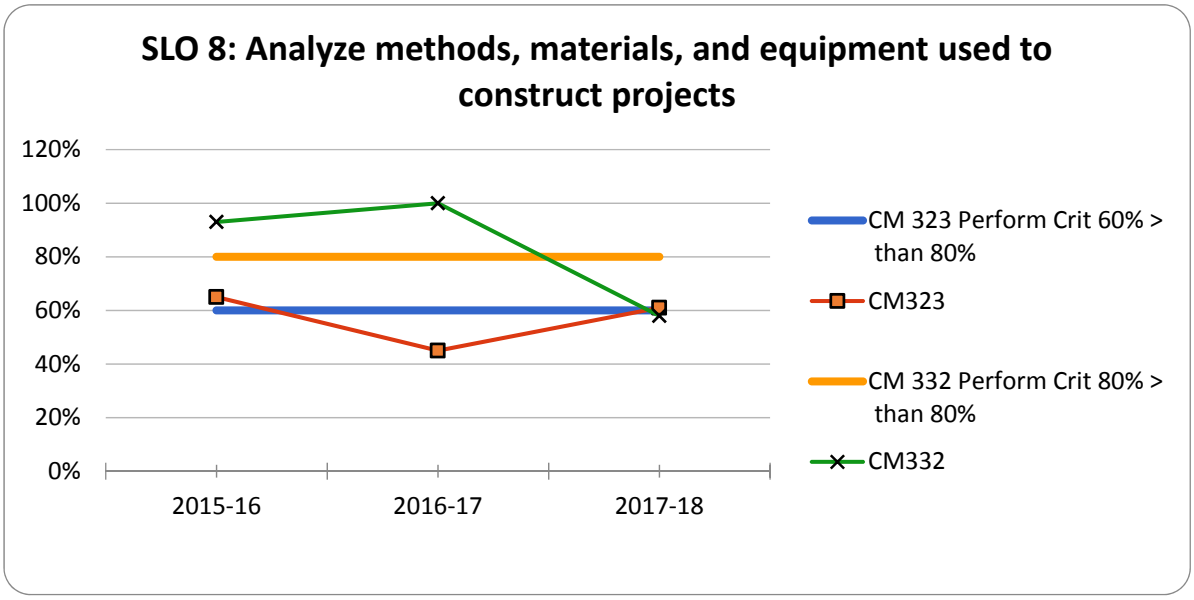


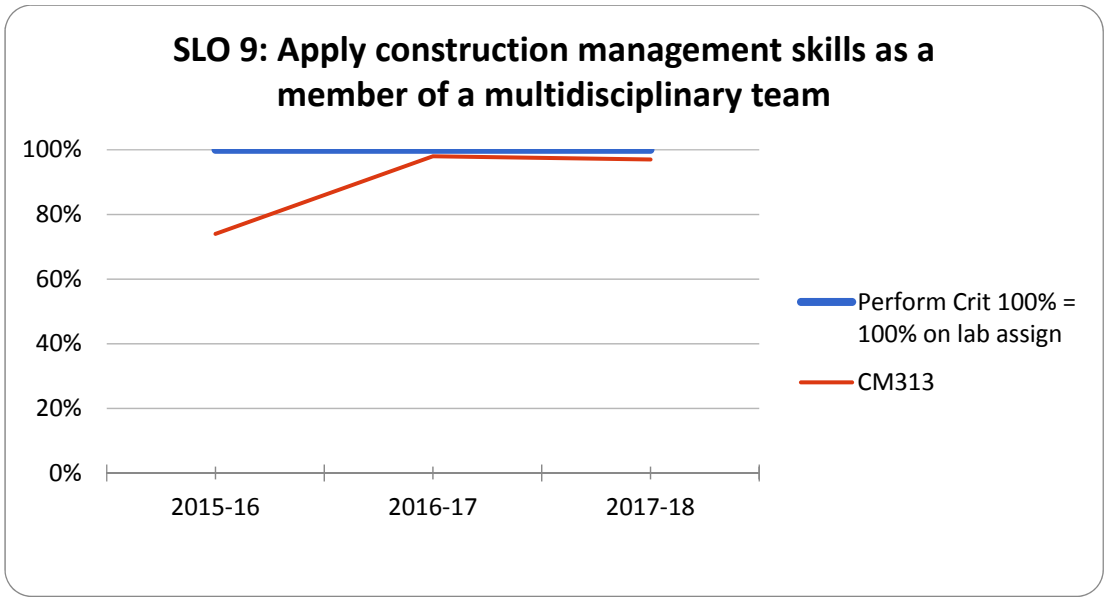


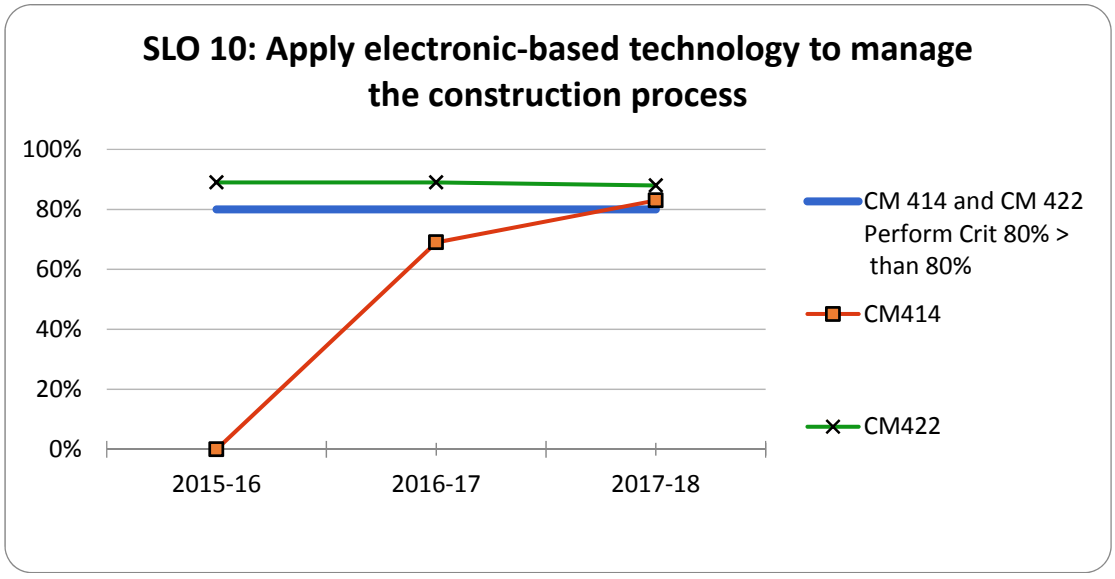
CM 431C was not offered in 2016-17



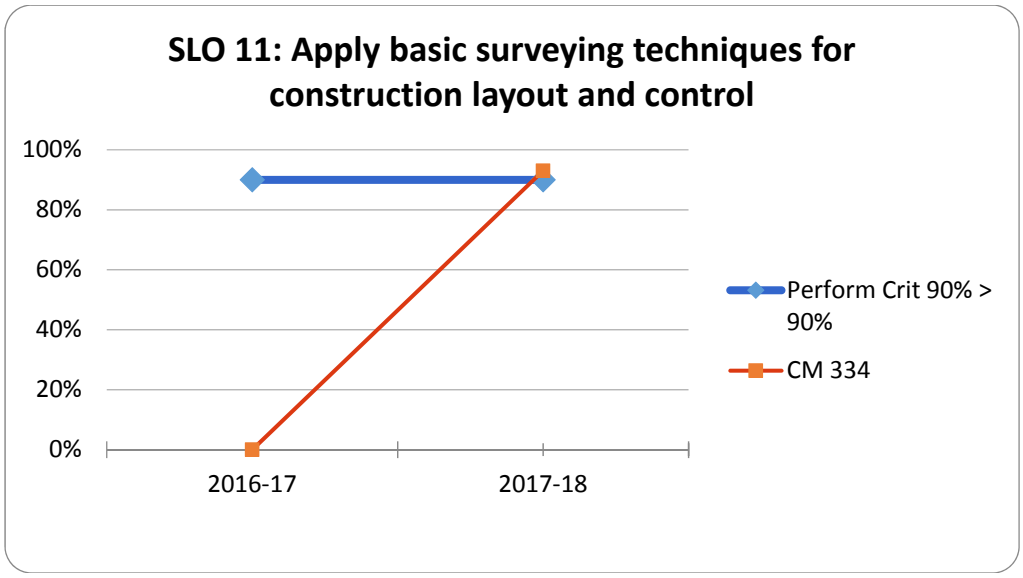

SLO 7: Analyze construction documents for planning and management of construction process
100%
80%
60%
40%
20%
0%
2015-16
2016-17
2017-18
Perform Criteria: 80% greater than 80%
CM311 Autumn A
CM311 Autumn B
CM 311 Spring


SLO 8: Analyze methods, materials, and equipment used to construct projects
120%
100%
80%
60%
40%
20%
0%
2015-16
2016-17
2017-18
CM 323 Perform Crit 60% > than 80%
CM323
CM 332 Perform Crit 80% > than 80%
CM332

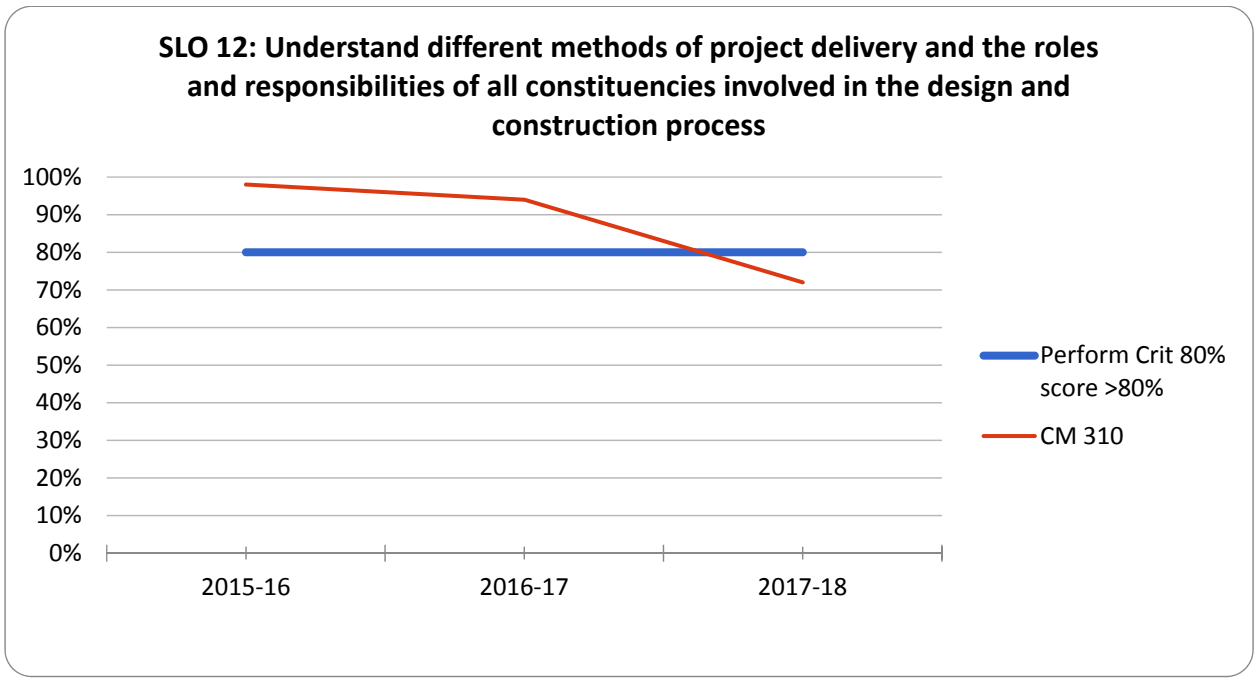


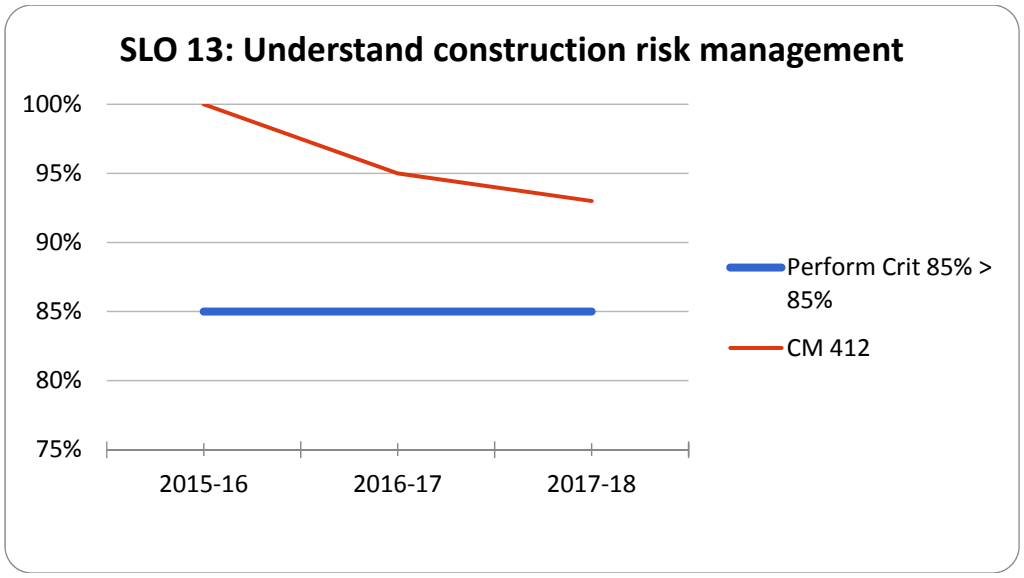


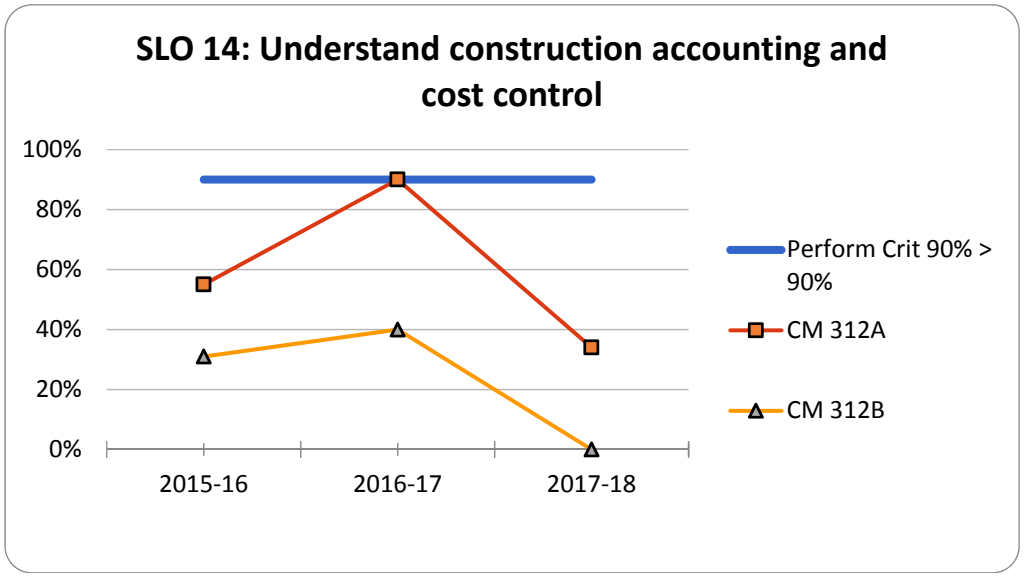
CM 414 was not a required class in 2015-16



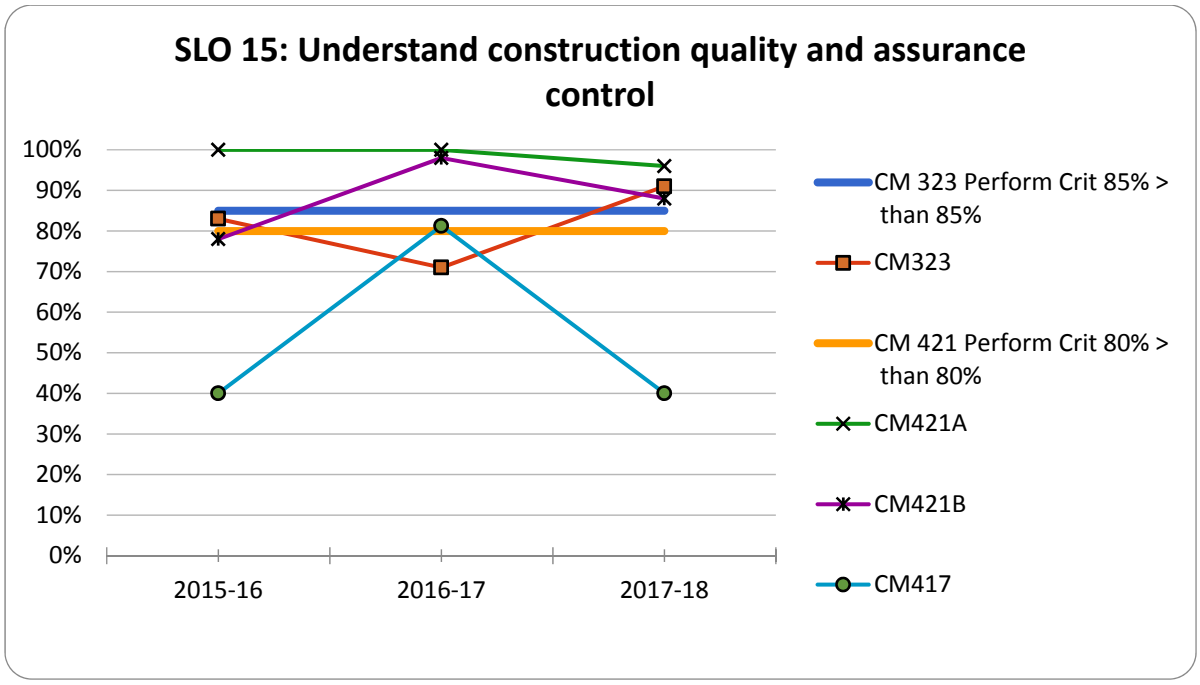
Assessment data was not collected in 2016-17

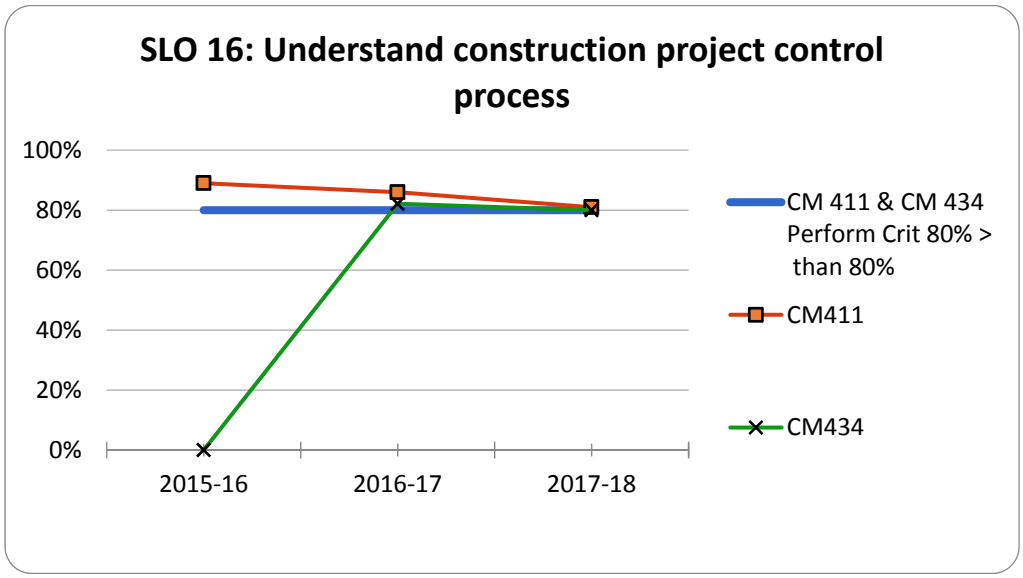




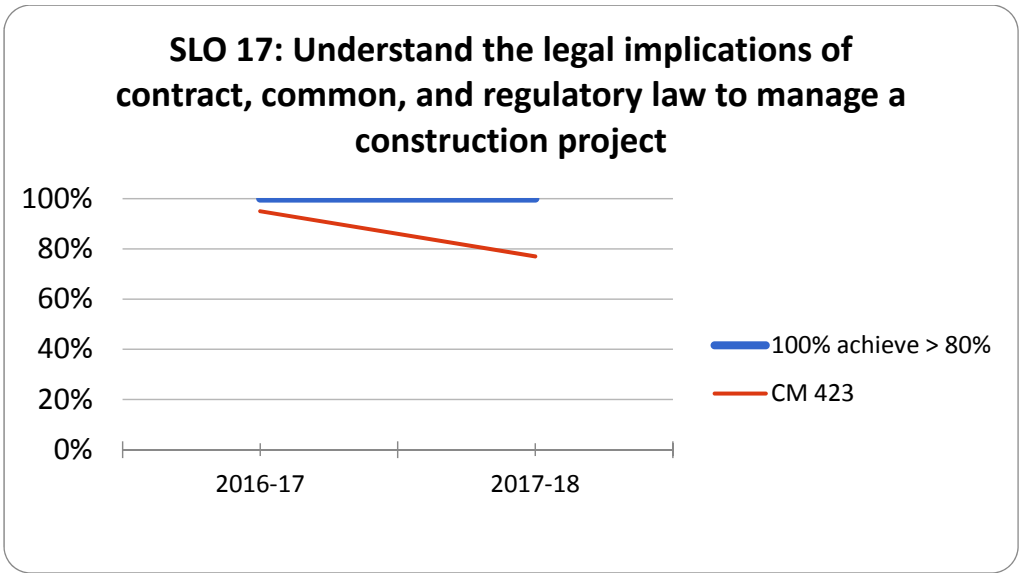


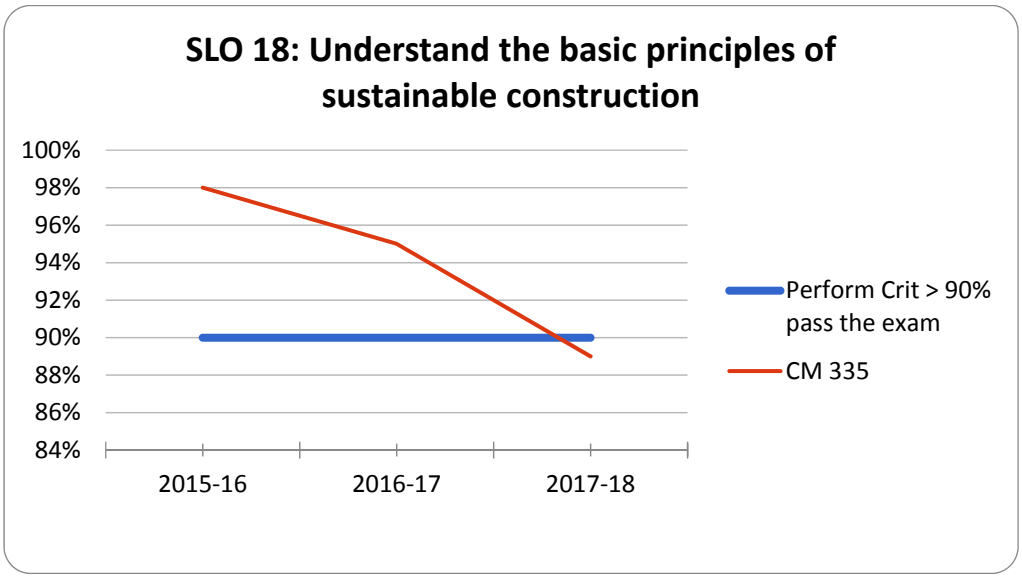
CM 312 was combined into one section in 2017-18, CM 312A, thus CM 312B was not offered

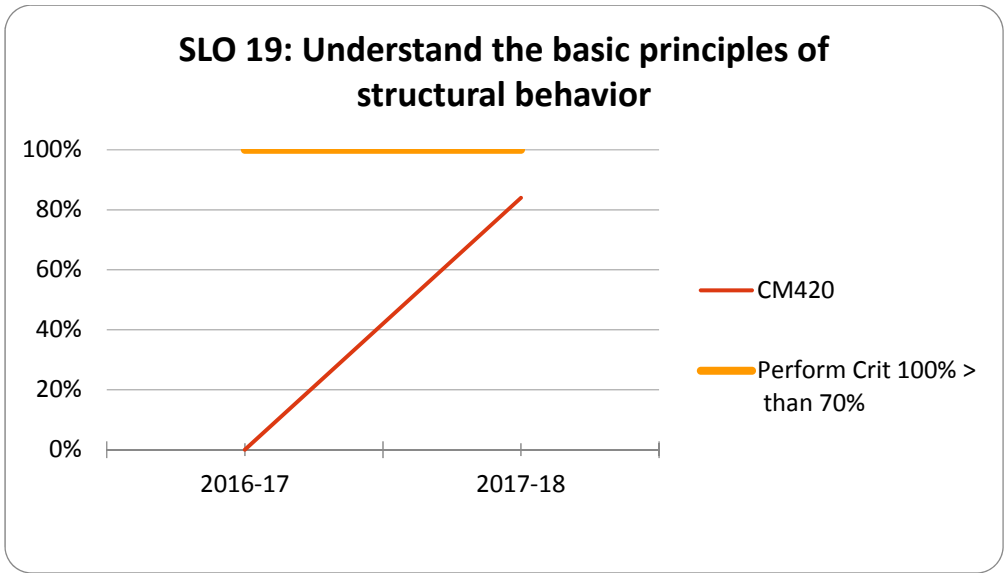




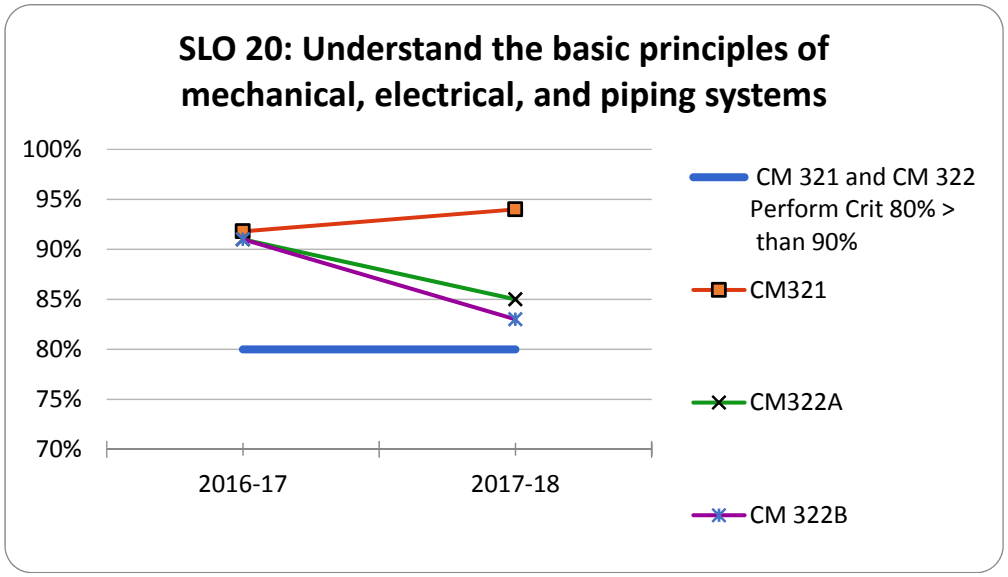
CM 434 is a new class that was not offered in 2015-16


SLO 17: Understand the legal implications of contract, common, and regulatory law to manage a construction project
100%
80%
60%
40%
20%
0%
2016-17
2017-18
100% achieve > 80%
CM 423


SLO 18: Understand the basic principles of sustainable construction
100%
98%
96%
94%
92%
90%
88%
86%
84%
2015-16
2016-17
2017-18
Perform Crit > 90% pass the exam
CM 335



SLO data was not collected 2016-17



Appendix C
Faculty and CIAC review and recommendations

At the faculty retreat on 19 September 2018 the faculty reviewed the end-of-year report and each SLO assessment data in detail.

Overall
The department now has (in most cases) three years' worth of data. Most SLOs are being accomplished and are close to or meet performance levels. A few SLOs need attention and will be discussed in further detail.

For some SLOs, the performance level is that 100% of students must achieve a certain level. This created a lot of discussion because we are not meeting our performance level of 100% for all SLOs. Some students prioritize certain classes over other classes, social events, and work. A few students do not put the effort in to achieve our required level of student learning. However, the faculty felt that a performance level that 100% obtain a certain level was appropriate. We may not achieve the 100% mark, but this still allows us to strive to hit this mark with important subjects.

Specific SLO's not meeting performance levels

SLO 1 Writing
Previously, we had three faculty members teaching this class. We now have hired one faculty member to teach both section of this class. We feel this adds consistency to the course. The instructor has improved student learning by improving assignments. This instructor will work with identified lower achieving students to help increase student learning.

SLO 2 Oral
The performance level dropped this year in a couple of sections. This is a result of one student in each section not achieving the required performance level. Since the drop is very minor, this SLO should be monitored but no specific actions are required.

SLO 3 Safety
CM 333: This was the first year that CM 414 was required (offered concurrently with CM 333) and the students had a busy quarter with most taking 18 credits. It was felt that the students who did poorly simply did not put in the effort to create a safety plan. Efforts will be made to coordinate assignments.
CM 431: Results dropped in two sections. Feedback from the instructors was that students did not create site-specific safety plans. More instruction on what a site-specific safety plan include will be covered in CM 333 and CM 431.

SLO 4 Estimate
This SLO is another example of having a performance level that 100% of the students will achieve an 80%. We are achieving upper a percent in the upper 90's and strive to achieve 100%. Instructors plan to identify students that are struggling and reach out to them and offer help.

SLO 5 Schedule
All data show we have achieved the required performance level and no changes or actions are needed.

SLO 6 Ethics
The students did meet required performance levels and no specific actions are required.

SLO 7 Documents
Student performance has been below expected performance levels. A new book is being adopted for AY 2018/19 that gives students more hands on opportunities to touch different plan sets. This new textbook has lots of exercises involving four sets of plans for both residential and commercial projects.

SLO 8 Methods and equipment
The performance criteria for these SLOs was updated: CM 323 went from 45% to 60% earn > 80% and CM 332 went from 90% to 80% earn > 80%. These changes were made based on data collected, that CM 323 performance level was too low, and the students' tendency to put a lower priority on accomplishing learning in these classes. CM 323 appears to meet performance goals. CM 332 had a dip in learning that is being addressed by the instructor updating the existing out-of-print textbook.

SLO 9 Teams
Performance is near the goal of 100%. Faculty will strive to ensure all students can meet learning expectations.

SLO 10 Technology
Performance goals are being met and no specific action is required.

SLO 11 Surveying
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 in this class, and in Spring 2018 a new instructor was hired. The indirect measure recorded student's perception from two years ago since students take this course in their junior year. The direct assessment measure got off to a slow start due to instructor issues. Nevertheless, the direct assessment of student learning was above performance criteria. This SLO data needs to be monitored to ensure student learning.

SLO 12 Project Delivery
For the first two years, student learning met performance requirements. The recent dip may have been due to an assignment and textbook change. The assignment will be clarified to better define expectations.

SLO 13 Risk
Students are meeting performance goals and no change is required.

SLO 14 Accounting
This SLO is assessed in CM 312 Construction Accounting. CM 312 was combined into one section in 2017-18, CM 312A. Student learning performance is below the performance standard. Some of the learning issues in this class have been based on the sequencing of this class. It has been scheduled for the first quarter during the junior year when students are still learning plan reading and taking the introduction to CM class. Some of the topics are advanced for beginning CM students. This class has been moved to the senior year since it is a more advanced topic.

SLO 15 Quality
Assessment of student learning in CM 323 is fine. Students in CM 421 seem to do fine but students in CM 417 do not meet performance goals. This SLO was developed in 2015 and tests the students' knowledge of passive and active QC. However, a review of the test questions reveals that some questions may be confusing depending on who is lecturing and which points are emphasized. The instructors for CM 421 and CM 417 plan to get together and create a better SLO and rubric.

SLO 16 Control
Students are meet performance criteria and no specific actions are anticipated.

SLO 17 Law
For the second year, students are not meeting performance criteria. The department chair will discuss results with the affiliate faculty member to determine what can be done to accomplish a higher level of student learning.

SLO 18 Sustainable
This year's performance results were slightly below performance requirements, 89% vs 90%. This may be due to a decreasing emphasis in sustainability by industry or just not as many students passing the LEED Green Associates exam. This SLO will be monitored for future trends.

SLO 19 Structures
Due to instructor issues, this SLO did not have data collected until AY 2017/18. The one data point shows student learning not meeting expectations. The instructor feels 100% of the students should be able to earn at least a 70% on the formwork portion of the exam. Since this is a calculations-based class, a certain percentage of students struggle with the content. The instructor will strive to identify struggling students earlier and provide them with additional assistance in getting through the calculations.

SLO 20 MEP
An indirect assessment from the students indicates they do not feel they have the knowledge expected from the MEP classes. The department chair has been working with the four MEP instructors to improve learning in this class. Some of the material was redundant to that of the project management class and more material about MEP systems is now included in the courses. The instructors have meet several times in summer of 2018 to coordinate course work and have

selected a new textbook. The most recent indirect data is from seniors; because this is a junior level class, results of improvements will not be seen until 2018/19.

CIAC review and recommendations

The results were shared with CIAC on 5 October 2018. A brief presentation of the ACCE accreditation process was outlined. The CM Department's quality improvement plan was reviewed. The results of our assessment data was shared with the council.

SLOs that met performance standards were not discussed.

A total of 16 SLOs were below performance standards. In order to prioritize the SLOs, council members were given charts of these 16 SLOs. All 16 underperforming SLOs were hung on the walls around the room. Council members were given five "stickys" and then asked to put them on the SLOs that were most important to them. The criteria for placing the stickys were 1) importance, 2) differential below performance criteria, 3) data trend. The highest priority SLOs were the SLOs with the most stickys.

CIAC's was concerned with following SLOs, in order of priority:

SLO 1 Writing
Council members felt strongly that this was the highest priority SLO. The 100% performance level was appropriate. Council members suggested that the curriculum also be expanded to include talking on the phone or understanding the power of a voice vs electronic communication. The instructor plans to keep students motivated to accomplish student learning by empathizing construction industry interest in this area.

SLO 7 Documents
CIAC felt this area was extremely important. We should raise the bar to 100% of the students should earn greater than 80% since this class is a basic skills course. The department chair will meet with the two faculty members that teach this class. We will develop a plan to increase the student learning in this class.

SLO 4 Estimate
This is another example of having a performance level at 100% of the students will achieve an 80%. CIAC members stressed that a 100% performance level was appropriate for this important subject. Faculty members will identify students that are struggling earlier on to ensure they can accomplish the required student learning.

SLO 12 Project Delivery
CIAC felt with all the different project delivery options this was an important area to ensure students were meeting expected learning outcomes. The recent dip may have due to an

assignment change. The assignment will be clarified to define expectations better. CIAC members offered to guest lecturer to provide recent examples of different project delivery methods.

SLO 17 Law
CIAC felt that understanding construction law was an area of student learning that needed improvement. The department chair will discuss results with the affiliate faculty member to determine what can be done to accomplish a higher level of student learning.

SLO 14 Accounting
CIAC understood the sequencing issues associated with this class since they initiated the change of this class to the senior year. The data from future assessments of student learning will need to be monitored. The department chair is tasked with working with the faculty member to ensure we have the appropriate assignment that correctly identifies student learning.

The remainder of the SLOs were viewed as needing to be monitored but no specific actions were needed. These SLOs were either very closed to meeting performance levels or faculty have identified corrective measures.

SLO 2 Oral
SLO 3 Safety
SLO 5 Schedule
SLO 6 Ethics
SLO 8 Methods and equipment
SLO 9 Teams
SLO 10 Technology
SLO 11 Surveying
SLO 13 Risk
SLO 15 Quality
SLO 16 Control
SLO 18 Sustainable
SLO 19 Structures
SLO 20 MEP