

2019 Construction Management Program Information

The UNLV Construction Management program is accredited by the American Council for Construction Education (ACCE). Our most recent accreditation visit occurred in April 2014 and the program was reaccredited at ACCE's Board of Trustees meeting in July 2014. Next accreditation visit is expected in March 2020.

ACCE accreditation requires information about the program and its success be provided to the general public. Specifically, the program must publish objectives of the degree program, admission requirements, degree program assessment measures employed, the information obtained through these assessment measures and actions taken as a result of the feedback, student achievement, the rate and types of employment of graduates, and any data supporting the qualitative claims made by the degree program. This document provides this information for the UNLV Construction Management program.

If you have questions about the information published here or if you would like more information about UNLV's Construction Management program, please contact Dr. Sajjad Ahmad, Department Chair, at 702-895-5456 or sajjad.ahmad@unlv.edu.

1. UNLV BS in Construction Management Program Objectives

The UNLV BS in Construction Management focuses on four (4) specific objectives. These objectives are:

- Graduates will meet the expectations of employers of construction managers in all areas of construction practice
- Graduates will be capable of advancement in the construction profession
- Qualified graduates will be capable of pursuing advanced study

2. Admission Requirements for Construction Management Students

University admission requirements are described in detail at the following links:

Freshmen Students: <https://www.unlv.edu/admissions/freshman>

Transfer Students: <https://www.unlv.edu/admissions/transfer>

International Students: <https://www.unlv.edu/admissions/international>

Howard R. Hughes College of Engineering has additional admission requirement: students complete Math 126 - Pre-Calculus I (or higher) with a minimum grade of C. This is described at: <https://www.unlv.edu/asc/advising/major>

The Department of Civil & Environmental Engineering and Construction does not have any additional admission requirements.

3. UNLV BS in Construction Management (BSCM) Quality Improvement Plan

A continuous improvement process ensures that the BSCM program provides students with the best possible undergraduate education in construction and prepares them to become successful construction managers. In that pursuit, the Construction Management Program strives to provide the following learning outcomes:

Upon graduation from UNLV Construction Management Program a graduate shall be able to:

SLO 1- Create written communications appropriate to the construction discipline.

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 5- Create construction project schedules.

SLO 6- Analyze professional decisions based on ethical principles.

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

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

SLO 9- Apply construction management skills as an effective member of a multi-disciplinary team.

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

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 13- Understand construction risk management.

SLO 14- Understand construction accounting and cost control.

SLO 15- Understand construction quality assurance and control.

SLO 16- Understand construction project control processes.

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 plumbing systems.

Assessment Process for Student Learning Outcomes

The Civil and Environmental Engineering and Construction faculty has established and follows a robust process for evaluating the academic program and implementing changes toward our goal of continuous improvement. A variety of assessment tools gather information from students, faculty, alumni, and employers. Some provide direct measurements of student outcomes and others provide stakeholder opinions on student outcomes, while some provide more general program assessment information. The student outcome assessments and data collected from alumni, industry, and stakeholders are reviewed every year in a dedicated faculty retreat, and suggestions for improvement or changes are made and voted on by the faculty.

Assessment Tools and Data Collection

The following assessment tools are used:

Course examinations and assignments. Most Construction courses utilize homework problems, quiz questions, and exam problems to assess student performance. These same measures link directly to student learning outcomes.

Student term projects. Student projects are an important component of many courses and usually culminate with a written report, oral presentation, or both. Most projects require independent thinking to formulate a problem, identify possible approaches or solutions to the problem, and gather information to complete the project.

Course evaluations. Students complete evaluations for each course near the end of the semester. These evaluations allow direct student input on instructor effectiveness and student learning outcomes, and also allow students to provide written comments. These results are provided to instructors at the end of the semester. The Department Chair uses the results to provide broad feedback to all faculty members and as input to annual faculty evaluations. In addition, the Department Chair uses these data to identify faculty who need teaching training, additional instruction support, or change in teaching strategies.

Senior Exit Surveys. Each student is asked to complete (anonymously) a Senior Exit Survey that covers a wide range of topics including Student Learning Outcomes and Program Objectives. These surveys are completed on-line near the end of their final semester (usually within 1 month of graduation). Results

from these surveys are shared with faculty and used, along with other assessment data, for learning outcome assessment and program improvement.

Senior Exit Interviews. The Department Chair interviews each graduating senior within a few weeks of graduation. These interviews usually last 30 minutes and consist partially of career mentoring, but primarily provide students an opportunity to give direct input to the Department Chair. Students are asked to comment on facilities, support services (tutoring, advising, and career), instructors, courses and any issues students may have encountered in the program and other areas of the University. Student inputs on Program Objectives and SLO's are also solicited during this interview.

Alumni Surveys. An online survey is distributed to alumni to obtain input on the program based upon their experiences in the profession. Submissions are anonymous. Alumni Surveys are conducted every three years.

Employer Surveys. An online survey is distributed to employers to obtain input based upon their experiences with graduates of the program. Submissions are anonymous. Employer surveys are conducted every three years.

Results from both Alumni and Employer Surveys are shared with faculty and used, along with other data, for assessment of learning outcomes and program educational objectives.

AIC Exam. All Construction majors are **required** to take the AIC Exam prior to graduation. Detailed results for each test taker are provided by AIC every year. The CEEC department has a course (CEM 455) dedicated to reviewing major topics for the exam. Students are required to make a good faith attempt for the exam; it is not required to pass the exam to graduate.

CEEC Industrial Advisory Committee. The CEEC Advisory Board, comprised of alumni and employers in civil engineering and construction, meets quarterly and provides general input about the program and its direction. Additionally, the Advisory Board Curriculum Committee meets independently and provides specific input on curriculum matters. The Advisory Board completed a comprehensive review of all construction courses in Spring 2018 and provided input to the faculty for consideration. This review also served to increase Advisory Board awareness of the curriculum content to improve their ability to provide useful input.

Additionally, graduation rates and student retention rates are carefully followed. While these are not direct measures of student outcomes, they are extremely important to the university's goal of increasing retention, and to the long-term health of the department, as they influence future university allocation of resources and faculty positions. A summary of assessment tools is shown in Table 1.

Table 1. Summary of assessment tools.

External Assessments Tools		
Label	Description	Frequency
A1	AIC Exam Results	Once per Year
A2	Employer Surveys	Every Three Years
A3	Alumni Surveys	Every Three Years
A4	Program Review by Advisory Board	Every Three Years
Internal Assessments		
Section	Description	Frequency
A5	Faculty Evaluation of Student Learning Outcomes	Every Semester
A6	Graduating Senior Exit Surveys	Every Semester
A7	Student Evaluation of all Class Instructors	Every Semester
A8-1	Program Review (Major) by faculty	Every Three Years
A8-2	Program Review (Minor) for Catalog Updates	Every Year

External assessments (A1-A4) are gathered from alumni and employers (through widely-distributed surveys), the CEEC Advisory Board, and AIC exam results. All collected assessment data are evaluated by the department's Undergraduate Curriculum and Assessment Committee (UCAC). The UCAC makes recommendations to the faculty based upon those assessments. Our Advisory Board meets quarterly with the Department Chair and provides direct feedback through that channel. The Department Chair or the UCAC (as appropriate) recommends potential changes to the faculty. Faculty discusses and votes on proposed changes. The Department Chair also solicits input from the Advisory Board as issues arise where their perspective can be valuable. The educational outcome assessment and continuous improvement cycle is shown in Figure 1.

Continuous Improvement Cycle

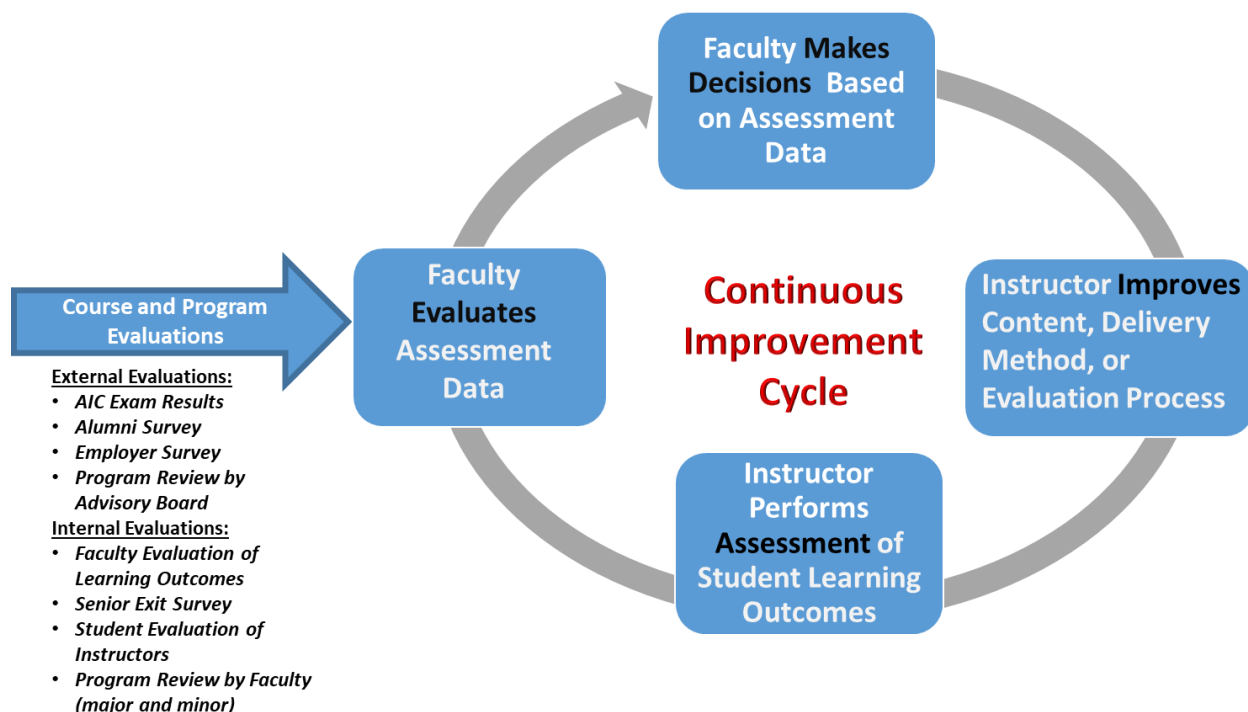


Figure 1. Course and program assessments and continuous improvement cycle.

Internal assessments (A5-A8) are also integral to our continuous Quality Improvement Process. Information is gathered from graduating seniors, who are at a point to provide particularly insightful input, through a formal exit survey and one-on-one exit interviews with the Department Chair. While some of the input is duplicative, the different characteristics of the two instruments provide robust feedback and input for improvement. During the last weeks of each semester, students evaluate every offered course. These evaluations cover instructor performance in areas related to both classroom performance and levels of learning outcome attainment. Additionally, class instructors provide formal assessment of Student Outcomes through several approaches including, designated homework and examination problems, in-class assignments, and class projects and reports.

Integration of inputs from a wide range of internal and external sources provides robust assessment of the CM program and outcomes. These assessments inform the faculty so they can make an appropriate judgment about curriculum, teaching methods, course content, and changes necessary to improve student learning and the quality of the program.

Flows of program assessment information and subsequent continuous improvement feedback are illustrated in Figure 2. The Department Chair or UCAC, as appropriate, initiates consultation with faculty, and changes are implemented either through individual instructors at course level, or directly at the curriculum/program level. Progress as a result of changes made is monitored to ensure improvements in the learning outcomes.

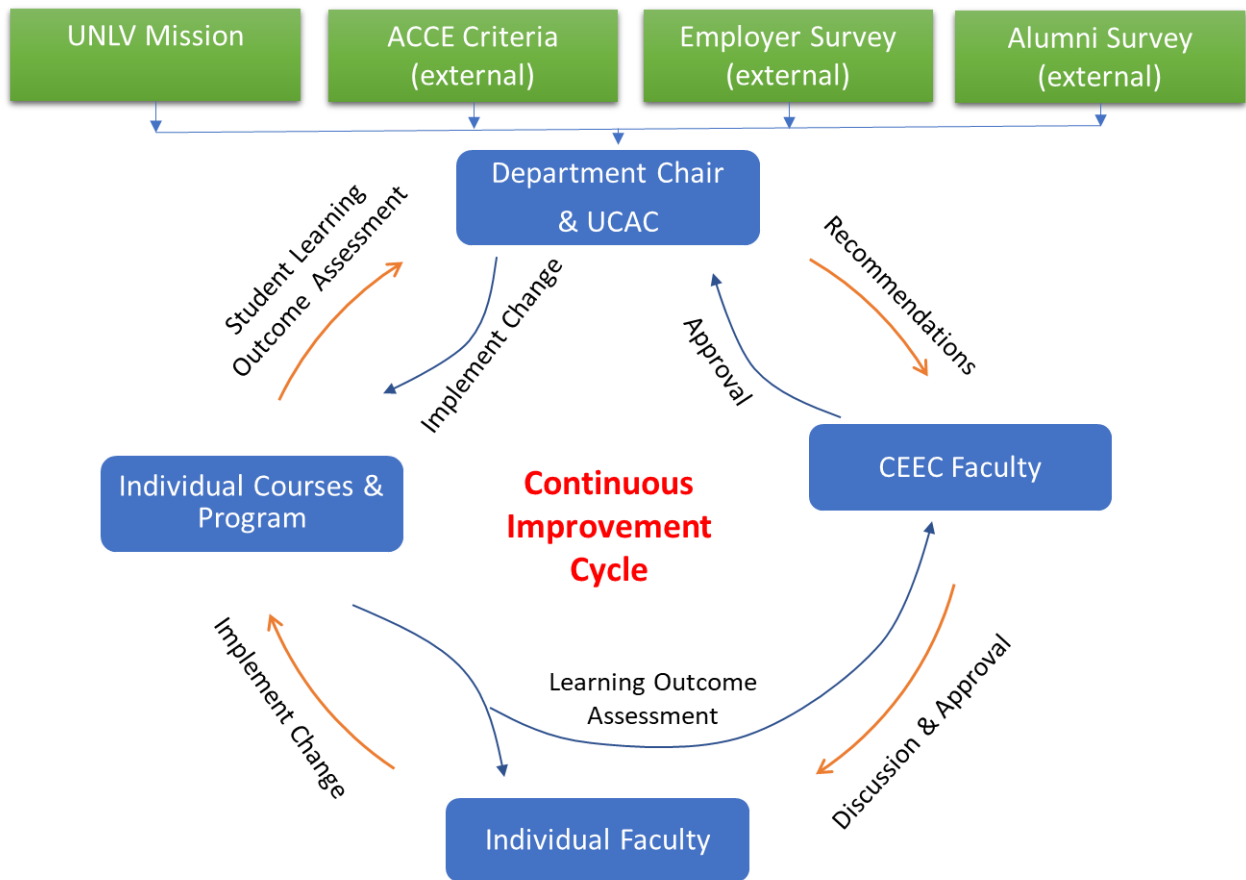


Figure 2. Program assessment information flows and continuous improvement cycle.

Evaluation of Collected Data and Decision Making

Direct and indirect assessment measures are employed to regularly evaluate our success in achieving these learning outcomes. These assessments collect information from all of our constituents – current students, graduates, alumni, employers, and interested community members. These data are evaluated by the CM faculty with help from key Advisory Board members to identify curricular and program changes to better attain the learning outcomes. Discussions of potential programmatic changes are initiated by CM faculty, presented to the

Department's Undergraduate committee, and then voted on by the entire CEEC faculty. Once approved by the faculty, changes must also be approved by College and University Curriculum Committees prior to implementation.

This Quality Improvement Plan is a continuous process and assessment results are analyzed immediately upon receipt. However, organized annual evaluations of all available assessment results are conducted during a daylong faculty retreat to ensure that the process leads to a continuously improving program.

4. Program Assessment Measures

A range of instruments are employed to assess how well our program accomplishes the learning objective and program outcomes. The measures employed and the schedule of their deployment is as follows:

Table: External Assessments Tools

Label	Description	Frequency	Type of Assessment	Used to Measure Achievement of	Procedure for data collection
A1	AIC Exam Results	Once per Year	Direct	Selected SLO's	Reported by AIC
A2	Employer Surveys	Every Three Years	Indirect	SLO and Program Objectives	On-line Survey
A3	Alumni Surveys	Every Three Years	Indirect	SLO and Program Objectives	On-line Survey
A4	Program Review by Advisory Board	Every Three Years	Indirect	SLO and Program Objectives	Reported by IAB

Table: Internal Assessments Tools

Section	Description	Frequency	Type of Assessment	Used to Measure Achievement of	Procedure for data collection
A5	Faculty Evaluation of Student Learning Outcomes	Every Semester	Direct	SLO	Collected and Reported by Instructor
A6	Graduating Senior Exit Surveys	Every Semester	Indirect	SLO and Program Objectives	On-line Survey
A7	Student Evaluation of all Class Instructors	Every Semester	Indirect	Teaching quality and SLO	On-line Survey
A8-1	Program Review (Major) by faculty	Every Three Years	Summative Assessment	SLO and Program Objectives	Report by faculty committee

A8-2	Program Review (Minor) for Catalog Updates	Every Year	Summative Assessment	SLO and Program Objectives	Report by faculty committee
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Additional assessments are employed as appropriate. The most recent data and assessments from each instrument are provided below.

Performance Criteria

Performance Criteria used to measure the achievement of the Degree Program Objectives and Program Learning Outcomes is provided in following Table.

Assessment Tool	Performance Criteria	Used to Measure Achievement of
AIC Exam Results	Pass rate equal to or better than national average	Selected SLO's
Employer Surveys	Score of 3.5/5.0	SLO's; program quality; program objectives
Alumni Surveys	Score of 3.5/5.0	SLO's; program quality; program objectives
Graduating Senior Exit Surveys	Score of 3.5/5.0	SLO's; teaching quality, program quality; program objectives
Faculty Evaluation of Student Learning Outcomes	Performance threshold set by individual faculty	SLO's
Student Evaluation of all Class Instructors	Score of 3.5/5.0	SLO's, teaching quality, program quality
Program Review by Advisory Board	Review and Approval	SLO's; curriculum, program quality; program objectives
Program Review by faculty	Meeting or exceeding above stated criteria for assessment tools	SLO's; curriculum, program quality; program objectives

Results

a. American Institute of Constructors' Associated Constructor Level I Exam

Construction Management Seniors takes the American Institute of Constructors' Associated Constructor Level I – Construction Fundamentals examination as part of CEM 455 Construction Management Practice. This course is taken in the student's final semester. All students must take the exam and the results comprise a portion of their course grade.

The program uses this examination as a measure of academic quality. The goal established by the program is to exceed the national average pass rate on the exam. Historically, the performance of UNLV CM students has exceeded that goal; the data are shown in the table below.

Historical UNLV Student Results on American Institute of Constructors' Associated Constructor Level I Exam

Year	Taking	Passing	% Passing	National (% Passing)
2019	12	9	75	62
2018	5	0	0	59
2017	2	2	100	70
2016	5	4	80	52
2015	3	3	100	48
2014	9	6	67	49
2013	13	11	85	53
2012	8	6	75	58
2011	5	4	80	61
2010	19	17	89	62
2009	12	11	92	67

The American Institute of Constructors' Associated Constructor Level I Exam provides significantly more information than just the pass rate. The table below shows the 2019 results from the 12 UNLV students who took the exam. UNLV students scored, on average, better than the national average in every subject area. Still, some areas were identified to be areas of weakness by AIC. These include: Understand the principles of sustainable construction (SLO 18); and Understand the principles of MEP (SLO 20). These areas (SLO 18 & SLO 20) are also considered areas of weakness nationally (based upon the national average score).

2019 Subject Area scores for UNLV students compared to the national average.

Subject Area	UNLV Avg.	National Avg.
SLO 1- Create written communications appropriate to the construction discipline.	80	75
SLO 2- Create oral presentations appropriate to the construction discipline.	75	71
SLO 3- Create a construction project safety plan.	75	73
SLO 4- Create construction project cost estimates.	75	72
SLO 5- Create construction project schedules.	79	74
SLO 6- Analyze professional decisions based on ethical principles.	77	73
SLO 7- Analyze construction documents for planning and management of construction processes.	76	73
SLO 8- Analyze methods, materials, and equipment used to construct projects.	74	70
SLO 9- Apply construction management skills as an effective member of a multi-disciplinary team.	76	74
SLO 10- Apply electronic-based technology to manage the construction process.	78	72
SLO 11- Apply basic surveying techniques for construction layout and control.	79	72
SLO 12- Understand different methods of project delivery and the roles and responsibilities of all constituencies involved in the design and construction process.	70	70
SLO 13- Understand construction risk management.	76	76
SLO 14- Understand construction accounting and cost control.	76	73
SLO 15- Understand construction quality assurance and control.	79	74

SLO 16- Understand construction project control processes.	83	79
SLO 17- Understand the legal implications of contract, common, and regulatory law to manage a construction project.	78	76
SLO 18- Understand the basic principles of sustainable construction.	67*	58
SLO 19- Understand the basic principles of structural behavior.	77	70
SLO 20- Understand the basic principles of mechanical, electrical and plumbing systems.	64*	59

*considered to be an area of weakness by AIC

b. Alumni and Employer Surveys

Associate Dean, College of Engineering deploys Alumni and Employer surveys every 3 years. Most recent survey was conducted in 2018. The surveys were designed so that each could be deployed as singular survey to simplify delivery. This Alumni survey collects information on all degree program in the college. Based on respondent' selection of degree, a different set of questions are posed.

While the 2018 survey results did not provide any startling results, there were some clear take away messages for the program. Overall, employers are satisfied with the program and our graduates. Alumni also are generally satisfied. Most Alumni chose "Agree" for most positively stated questions rather than "Strongly Agree." On the surface, this looks like all good news. However, we hoped for a much higher level of satisfaction from the biased audiences who took this survey. This tempered response likely results from a combination of factual observations, i.e. they truly have found areas in which we need to improve, and perception resulting from historical communication with the University. This lack of overwhelmingly positive results led to a complete review of the CM curriculum both by faculty and advisory board.

Table 2. Student Learning Outcomes - Results from the Questionnaire for Alumni and Employer Surveys (2018).

Likert scale ratings range from 5 (strongly agree) to 1 (strongly disagree). Shaded cells show average scores below the 3.5 target rating of "Agree."

Did your studies at UNLV help you develop the following capabilities?	<i>Alumni</i>	<i>Employer</i>
SLO 1- Create written communications appropriate to the construction discipline.	4.1	4.43
SLO 2- Create oral presentations appropriate to the construction discipline.	4.4	4.57
SLO 3- Create a construction project safety plan.	4.3	4.43
SLO 4- Create construction project cost estimates.	4.6	4.67
SLO 5- Create construction project schedules.	4.6	4.33
SLO 6- Analyze professional decisions based on ethical principles.	4.1	4.67
SLO 7- Analyze construction documents for planning and management of construction processes.	4.3	4.33
SLO 8- Analyze methods, materials, and equipment used to construct projects.	4.4	4.50
SLO 9- Apply construction management skills as an effective member of a multi-disciplinary team.	4.1	4.50
SLO 10- Apply electronic-based technology to manage the construction process.	4.1	4.67
SLO 11- Apply basic surveying techniques for construction layout and control.	4.0	4.33
SLO 12- Understand different methods of project delivery and the roles and responsibilities of all constituencies involved in the design and construction process.	4.3	4.67
SLO 13- Understand construction risk management.	4.3	4.67
SLO 14- Understand construction accounting and cost control.	4.3	4.67
SLO 15- Understand construction quality assurance and control.	3.9	4.50
SLO 16- Understand construction project control processes.	4.3	4.67
SLO 17- Understand the legal implications of contract, common, and regulatory law to manage a construction project.	4.3	4.17
SLO 18- Understand the basic principles of sustainable construction.	4.0	4.67
SLO 19- Understand the basic principles of structural behavior.	4.1	4.67
SLO 20- Understand the basic principles of mechanical, electrical and plumbing systems.	3.9	4.50
<i>Likert scale ratings range from 5 (strongly agree) to 1 (strongly disagree)</i>		

c. Senior Exit Interviews and Surveys

Senior exit surveys and interviews are also important components of program assessment. They provide essential student input on the program, its strengths, weaknesses, and areas of concern. First, students complete an online exit survey. Then the Department Chair interviews each graduate individually. Students are asked for their input related to all aspects of the program, including coursework, faculty, advising, career guidance, and any other related subject they may wish to raise. The Chair attempts to limit questions to clarification of specific points or as necessary to stimulate a productive conversation. These unstructured, open-ended discussions typically last 30 minutes each. Since data collected in this form is subject to bias, there is no attempt to gather quantifiable data. Instead, the Department Chair produces a summary of the interviews that is distributed to the faculty and Dean. The summary focuses primarily on synergistic issues raised by multiple graduates, although a critical issue raised by a single graduate could be sufficient to raise the concern to the faculty. Responses vary by issue, but the faculty attempt to respond to each issue appropriately.

The primary issue raised by the CM graduates during the Spring 2019 exit interviews was course scheduling; they want more courses at night. This is an important issue that merits careful consideration. While I understand their concerns, it is not clear whether night or day courses are best for the program's growth. Currently, we start out with day classes at the freshman level, then transition our CM courses to later in the day with the senior level courses all being in the evening.

The Exit Surveys provided more quantifiable information from the graduating students. The results are summarized in the Table below. In general, it shows widespread satisfaction with the CM program. It also shows that students believe that they successfully accomplished most of the Student learning objectives established for the program. There were several areas of concern identified (colored cells with score below 3.5) in 2017-2018 academic year. This issues were brought to the knowledge of respective instructors and several changes were made in the content and delivery. This has resulted in overall improvement in several SLO's in 2018-2019 academic year.

Table 3. Student Learning Outcomes. Senior Exit Survey self-perception ratings student learning outcome attainment from 2017-2018 and 2018-2019 academic years Shaded cells show average scores below the 3.5 target rating.

Did your studies at UNLV help you develop the following capabilities?	2018	2019
SLO 1- Create written communications appropriate to the construction discipline.	4.0	3.83
SLO 2- Create oral presentations appropriate to the construction discipline.	3.8	3.83
SLO 3- Create a construction project safety plan.	3.0	3.83
SLO 4- Create construction project cost estimates.	3.2	4.17
SLO 5- Create construction project schedules.	3.4	3.67
SLO 6- Analyze professional decisions based on ethical principles.	4.0	4.50
SLO 7- Analyze construction documents for planning and management of construction processes.	3.6	4.17
SLO 8- Analyze methods, materials, and equipment used to construct projects.	3.8	4.17
SLO 9- Apply construction management skills as an effective member of a multi-disciplinary team.	3.6	4.33
SLO 10- Apply electronic-based technology to manage the construction process.	3.6	3.50
SLO 11- Apply basic surveying techniques for construction layout and control.	3.6	3.67
SLO 12- Understand different methods of project delivery and the roles and responsibilities of all constituencies involved in the design and construction process.	4.0	4.67
SLO 13- Understand construction risk management.	3.6	4.33
SLO 14- Understand construction accounting and cost control.	2.8	4.00
SLO 15- Understand construction quality assurance and control.	3.2	4.00
SLO 16- Understand construction project control processes.	3.6	4.17
SLO 17- Understand the legal implications of contract, common, and regulatory law to manage a construction project.	4.0	4.67
SLO 18- Understand the basic principles of sustainable construction.	4.2	4.00
SLO 19- Understand the basic principles of structural behavior.	4.0	4.83
SLO 20- Understand the basic principles of mechanical, electrical and plumbing systems.	4.0	3.00
<i>Likert scale ratings range from 5 (strongly agree) to 1 (strongly disagree)</i>		

d. Individual Course Assessments

Internal reviews monitor performance of faculty and students on a routine basis to identify issues and concerns quickly and ensure program delivery and quality remains at a high level. Every course includes formal, anonymous evaluation by the students. The evaluation consists of three parts, course content, faculty performance, and student comments. These reviews are administered on-line and compiled by the UNLV to ensure anonymity. The results are provided individually to each faculty member and collectively to the Department Chair. The Department Chair uses the information to identify potential strengths, weaknesses, and concerns, then address those with individual instructors as appropriate. Actions are taken by the Department Chair, in consultation with the Dean, to remedy identified concerns as appropriate. Recently, course evaluation results have been summarized and distributed to all faculty in the following form:

Fall 2018 and Spring 2019 Teaching Evaluation Summary for Construction Management Courses

5.0	4.8	4.6	4.2	3.9	3.4
4.9	4.8	4.5	4.2	3.8	2.8
4.9	4.7	4.4	4.1	3.6	2.8
4.9	4.6	4.3	4.1	3.5	2.6
4.8	4.6	4.3	4.0	3.4	

These results are provided with this explanation of the color key:

- Green - Instructor did well; if you are at the low end of the spectrum, please continue your efforts to improve.
- Yellow - Instructor should commit themselves to improving your instruction and course management. However, if your course is unusually rigorous and that leads to a lower evaluation score, please continue to place quality over popularity.
- Red - Instructor needs to improve. Instructors in this category must prepare a written self-assessment of their performance in the course along with a goal for the next evaluation and specific strategies/changes to achieve that goal. This plan must be submitted to the Chair and a meeting held to discuss the plan. (none in this review)

Providing the data in this manner allows faculty to compare their performance with others in the department while respecting instructors' privacy. The results are used by individual instructor to improve course delivery and content.

CM Course/Curriculum Review by Advisory Board

Assessment results and the continual need to improve the program suggested that a comprehensive review of all existing CM courses in the program could potentially be useful. This review was conducted by the IAB Curriculum Committee in Spring of 2018 in the leadership of Mr. James Caviola.

This intensive review of the CM curriculum provided useful insights into what local employers are looking for in BSCM graduates. It also served to better inform the participants of the rigor within the current program. Many verbal comments were made about how "surprised" they were about the depth and breadth of the curriculum; they found it to be much more than they expected based upon their previous understanding. It also served to provide a foundation for our future discussion on program changes.

Committee suggested that drawing or specification reading skills and building codes should be emphasized in the curriculum to prepare students for their initial employment. After approval of faculty this was implemented.

Committee also suggested students be given elective options in the CEM courses to establish emphasis. Due to the small enrollment it was not considered feasible at that time. However, we will revisit this situation as enrollment grows.

The advisory board also reviewed Program Objectives in Spring 2019 and did not suggest any changes.

5. Actions Taken as a Result of Assessments

Program assessments provide insightful information into the performance of the program and its success in meeting the objectives and learning outcomes. However, this information is only valuable if it is used to modify the program and improve the results. Several specific actions have resulted from our recent assessment efforts.

- In last faculty retreat (August 2019), faculty decide to introduce Construction Management Capstone course in the CM curriculum (CEM 456). This course will be co-listed with Senior Design Course in Civil Engineering CEE 498. This will provide an opportunity for both Civil Engineering and Construction Management students to

work in multi-disciplinary teams. CM students will also be able to participate in College of Engineering Senior Design competition. This change will not result in any increase in total credit requirements because a social science course has been dropped. This will start in Fall 2020.

- Content of CEE 121 Engineering Surveying have been modified to include a dedicated building layout exercise.
- Based on student feedback, scheduling course now includes use of both Microsoft Project and Primavera.
- Content of CEE 301 CAD tools for Civil Engineering Design has been modified to accommodate topics of interest for Construction Students.
- Students reported that one of our Part Time Instructors (PTI) was not delivering a course at a satisfactory level. Some investigation showed that this had been a growing problem. After some discussion with the instructor, it was decided that it was best for all involved to find a new PTI for that course. Instructor was replaced in the next semester.

6. Student Achievement

BSCM students achieve many goals during the course of their academic program. Probably the most significant of these is passing the American Institute of Constructors' Associated Constructor Level I Exam. As shown in the table above, UNLV CM students continue to maintain a level of success far beyond the national average. In 2019, 9 of 12 students passed the exam on their first attempt.

In 2019, BSCM students also had the chance to participate in the UNLV's entry into the 2020 Solar Decathlon competition. UNLV has participated in this competition in 2013 and 2017. The UNLV team placed 2nd overall and was the highest ranked US entry (2013). More information on the DesertSol project can be found at <http://solardecathlon.unlv.edu/>.

Most of our CM students participate every year in ASC Regions 6 & 7 Student Competition that is held in the Reno, Nevada in February. In 2018 and 2019 our students took first place in the Design-Build Category. They also competed in the Commercial category. Our students are taking part in this competition in February 2020.

7. Employment of BSCM Graduates

All 12 BSCM graduates in Spring 2019 secured full-time employment in construction-related positions prior to graduation or immediately thereafter. Almost all graduates were employed in entry-level professional positions. All graduates took positions in the Las Vegas area.

Fifteen percent graduates reported receiving a salary between \$40,000 and 60,000/yr.
Remaining 85 % graduates reported salary above \$60,000/yr.