



WRITTEN ACADEMIC PROGRAM REVIEW REPORT ELEMENTS
Construction Management
Nigel A. Harrison
Fall 2021

Part 1: Program Overview

A. Brief Program Description/Summary

- a. The mission of the BAS degree in Construction Management is to prepare students for entry level positions within the various construction industry disciplines, and to meet the goals of the Technology Division. It also builds and reinforces the topics introduced in the AAS degree in Construction Management.

B. College and Program Mission

- a. The college mission and program mission are presented side- by-side in a table to show how the college and program missions align. The program mission states the purpose of the program; names its primary functions, activities and stakeholders; supports the college mission; and is distinctive. You can use the table below to record this alignment.

College Mission	Program Mission
WNC contributes to solutions for the 21st century by providing effective educational pathways for the students and communities of Nevada.	The BAS in Construction Management provides qualified and competent individuals to the workforce thorough relative, and up to date training on real world issues in the Construction industry.

C. College and Program Goals:

- a. Please review the current [WNC Strategic Plan linked here](#). On pages 3-4, you'll find a grid listing WNC's current Core Themes, Objectives, and Strategic Plan Indicators. Review your program's goals and student learning outcomes to find alignment between your program and the college's goals. Points of alignment could be between Core Themes, Objectives, and/or increasing/improving specific key performance indicators. You can use the table below to record your identified alignment.

College Core Themes, Objectives, and/or Key Performance Indicators	Program Goals and Student Learning Outcomes
<p>WNC provides equitable access for students regionally and demographically.</p> <p>WNC supports student learning, progress, and completion</p> <p>WNC identifies and closes achievement gaps across student populations by supporting achievement across demographic groups in traditional and non-traditional fields</p> <p>WNC responds to the needs of industry and provides effective pathways for students toward in-demand occupations</p>	<ol style="list-style-type: none"> 1. Prepare students for entry level management positions in construction 2. Know the subject matter appropriate to the emphasis of the degree 3. Communicate effectively and appropriately, in oral and written form 4. Locate, evaluate and properly utilize the tools and resources appropriate to a technology professional 5. Acquire skills and perform tasks necessary for employment or career advancement 6. An appreciation of the importance of social, ethical, legal and diversity issues 7. An appreciation of the need and importance of lifelong learning

D. **Short Description:** Include the following information and append supporting documents as appropriate:

- a. **Unique characteristics:**
 - i. The BAS in CPM is one of two bachelor’s degree at WNC.
 - ii. The majority of the courses are scheduled late in the day to accommodate non-traditional students that work full time.
 - iii. It provides job placement to its graduates.
 - iv. Open Entry classes offered through the program.
 - v. Certifications in both OSHA and NCCER offered.
 - vi. Currently over 6 Open Entry Courses offered.

- b. **Concerns or trends affecting the program:**
 - i. Internships are difficult to come by for the students. Currently the students are tracking down their own internship opportunities.
 - ii. The need for another fulltime faculty member in Construction Management. Currently I (Nigel A. Harrison) teach 9-10 classes each semester. I am more than willing to teach these classes each semester, because it keeps the students on track for graduation, but the quality of instruction suffers. With an additional instructor, every course could improve every semester instead of a few here and there.
 - iii. Currently the construction industry is booming in our local area. In years past, this trend has meant lower enrollment; however, our enrollment has not been affected negatively from this.

c. **Significant changes or needs in the next five years**

- i. The Construction program has begun talks with our counterparts at TMCC to share curriculum in regards to the 100 and 200 level courses. This relationship would create more awareness and a streamlined pathway into the BAS.
- ii. The new Management (MGT) classes have created more opportunities for students within the BAS program to graduate on time.
- iii. 15 out of 21 required Construction Management classes are offered fully online. This Canvas presence appeals to the working students. The 6 classes that are not fully online do have a Canvas presence, but due to their computer lab requirements, there is still a need for an in-class function.
- iv. P.A.T. is working on a pathway for students with any AAS degree to enroll into the BAS program.
- v. Open Entry (OE) classes have been a huge success. Each semester 3-4 OE classes are offered in the BAS.

d. **Program Student Learning Outcome/Required Course Curriculum Map**

EXHIBIT 1

E. **Degrees and/or Certificates Offered:** List degrees or certificates that are being evaluated for the purposes of this program review.

- a. Bachelors of Applied Science – Construction Project Management
- b. Associate of Applied Science – Construction Technology
- c. OSHA 10 hour and 30-hour cards. The construction industry requires the 10 hr training for the skills trade workers and the 30 hr training is required for supervisory or management workers.
- d. National Center of Construction Education and Research (NCCER):
 - i. Core Curriculum
 - ii. Construction Craft Laborer
 - iii. Construction Technology
 - iv. Curriculum Proctor
- e. Articulation Agreements have been processed between WNC and Nevada high schools to encourage enrollment.

F. **Niches Served:** Describe any niches in the community the program serves, including other academic programs served by program core courses.

- a. Community and campus service projects
- b. Play set design and construction for the Western Nevada Theatre Company
- c. Active involvement in area High School CTE programs
- d. Engagement with professional construction organizations
- e. Involvement in The Nevada Department of Education high school construction curriculum.

Part 2: Program Effectiveness

A. Evidence of Effectiveness

- a. Course Scheduling/Enrollment History Report: Institutional Research and Effectiveness provides this spreadsheet, which includes course scheduling history and enrollment figures for the most recent four-year period.

EXHIBIT 2

- b. Summary Data Sheet: Institutional Research and Effectiveness provides the Summary Data Sheet, a document that provides information on the headcount of students who have declared majors in the program, number of degrees and certificates granted, successful course completion data, student credit hours data, FTE, FTE faculty, workload ratios, and other information that provides a basis for demonstrating program efficiency and effectiveness.

EXHIBIT 3

- c. Systematic Assessment: Academic programs must include evidence that they systematically assess program level student learning outcomes and that data from assessments are used to make improvements to programs. The final program review report should include assessment reports from the past five years and an assessment plan for the upcoming five years. The report should also indicate the steps taken to make the student learning outcomes public and available to students.

B. Evidence of Satisfaction: Academic programs may include additional hard data regarding student satisfaction with courses and programs, employer satisfaction studies, etc., as indicators of effectiveness of the program. Results from the Noel-Levitz Student Satisfaction Inventory and the Community College Survey of Student Engagement can be broken out by declared major and are available upon request from Institutional Research and Effectiveness. Summarized results from student course evaluations, other student satisfaction surveys, and student focus groups and feedback panels are additional sources that may be included.

EXHIBIT 4

C. Certifications/Licenses: Explain if there are special certifications or accreditations available to the program and the status of the program relative to these certifications or accreditations.

The certifications below are active.

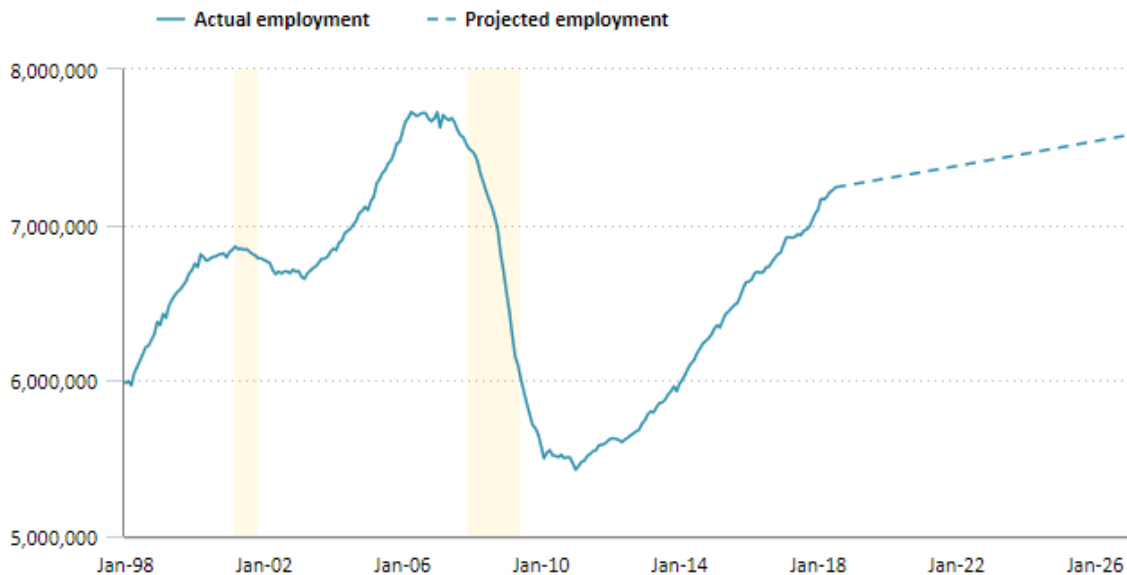
- a. OSHA 10 hour and 30-hour cards. The construction industry requires the 10 hr training for the skills trade workers and the 30 hr training is required for supervisory or management workers.
- b. National Center of Construction Education and Research (NCCER):
 - i. Core Curriculum
 - ii. Construction Craft Laborer
 - iii. Construction Technology

iv. Curriculum Proctor

D. Enrollment Trends: Instructional programs should discuss general student demographics and enrollment trends outlined by the following questions:

- a. What student demographic and enrollment trends are most notable?
During 2020-2021, Students of Color have increased from 36% to 43%, which is also the largest percentage of Students with Color the Construction program has experienced. It is also worth mentioning that 67% of the degrees awarded in the Construction program have been to Students of Color.
- b. What groups constitute the program's main demographic?
White or Unknown demographics constitute the majority of the program. With trends of Students of Color rising each semester, it is predicted that there will be a 50/50 split between Students of Color and White or Unknown Students.
- c. What efforts have been made by the program to recruit students?
Scholarship information has been pushed at all levels. During the Fall 2021 semester, I have had scholarship presenters in my classroom to promote the ease and effectiveness of scholarships specific to the program.
- d. What initiatives have been undertaken to increase FTE?
Open Entry classes have more than doubled in enrollment. With this knowledge and results-based initiative, I will increase the number of classes that are available OE.
- e. What initiatives have been undertaken to improve student retention?
Again, Open Entry is the way of the future. Students don't feel that a degree is so far away to achieve. Having the light at the end of the tunnel closer, helps them push through the difficult times. I am out in the community on a daily basis; church, National Guard, and my children's activities. I am promoting the Construction program to anyone that will hear it.

Chart 1. Construction industry employment, January 1998–July 2018 (seasonally adjusted) and projected 2026



E. Need for the Program: Explain the need and basis for determining the need for the program. Objective data, such as alumni studies, employer perceptions, data on transfer or transfer potential, local employment opportunities, and studies commissioned by WNC or NSHE, should be included when possible.

According to the Bureau of Labor Statistics Data (graphic pg. 11-12) the demand for construction workers in Northern Nevada has been slowly increasing each year since January, 2012. The Bachelor’s Degree here at WNC provides the necessary qualifications to satisfy the base or fundamental criteria for any entry level construction management position across the nation. Once the curriculum is completely developed online it will fill an additional need for those that currently work in the construction industry but live in rural areas of the state.

Currently there are only two four-year programs in construction management offered in the state. Here at WNC and the other being UNLV. With the increased demand from the industry the need for this particular program increases with every building permit awarded for new construction projects. The program receives requests from the industry for interns every week. Fortunately, at the time of this report the majority of the students enrolled in the program are working and receiving on-the-job training from our industry partners.

The detailed analysis of the data indicates the primary areas for improvement are increasing course enrollment and efficiency of delivery (scheduling). Some efforts have not launched and it will be one to three years before the BAS program can expect to see impact. Efforts include:

1. The BAS was designed to be a continuation of the AAS Construction Management program. Efforts made to increase enrollment and completion at the

Associate level should cultivate growth in the Bachelors program. For the Fall 2021 semester, a Pre-Engineering Skills Certificate and concentrated K-12 recruiting is underway.

2. Agreements with TMCC for a 2+2 program with AAS graduates are in the process.
3. Courses are aligned with the UNLV program for transferability.
4. Credit for Prior Learning is being considered with CLEP testing opportunities.
5. Experiential Credit up to 15 credits with verifiable related work history.
6. Outreach to construction employers for internships, placements and recruitment of incumbent workers.
7. Conversion of instructor led courses to on-line delivery is expanding the pool of potential students by reaching working adults and students in rural areas.
8. Construction focused marketing efforts which include local career fairs, industry events, and high school campus visits.
9. Open Entry (OE) courses are being offered more and more every semester with fantastic popularity.

Also, included is a letter from the Vice President of SouthWest Gas Corporation detailing the need for the Construction Management Program at WNC.

EXHIBIT 5

Construction of buildings: employment, outlook, and wages

Employment, 2016 and projected 2026, and median annual wages, 2017, in selected occupations

Occupation	Employment, 2016	Employment, projected 2026	Median annual wage, 2017
Carpenters	329,400	357,800	\$45,680
Construction laborers	227,300	259,600	35,340
Construction managers	99,200	113,100	90,380
Cost estimators	39,500	45,100	66,250
Cement masons and concrete finishers	23,900	27,200	44,480
Painters, construction and maintenance	22,000	25,200	38,240
Civil engineers	19,900	22,600	77,680
Helpers--carpenters	18,200	20,800	30,710
Structural iron and steel workers	15,800	17,900	50,920
Drywall and ceiling tile installers	10,500	12,000	42,860

Note: Occupations are not exclusive to this industry and may be employed in greater or fewer numbers in other construction subsectors.

Source: U.S. Bureau of Labor Statistics, Office of Occupational Statistics and Employment Projections. Wage data exclude self-employed workers.

F. Curriculum Review Report: Attach to this report the Curriculum Review Report and the Curriculum Committee Program Evaluation (the committee's response to the Curriculum Review Report). The reports from the last Program Review have been included.

EXHIBIT 6

G. Internal and External Reviewer Reports: Attach to this report the completed Internal and External Reviewer Reports.

EXHIBIT 7 – Internal Review Report

EXHIBIT 8 – External Review Report

H. Findings and Recommendations: Present the Program Review Team’s commendations and recommendations that are the result of the self-study process. Include:

- a. A Five-Year Action Plan outlining major goals, projects, and/or priorities within the program for the next five years.

EXHIBIT 9

- b. A Five-Year Assessment Plan outlining program-level student learning outcome assessment plans that ensures 1) all program-level outcomes are assessed within the next five-year period and 2) meaningful findings from those assessments are applied to the program.

EXHIBIT 10

- c. Program needs and/or opportunities for support, including budgetary requests, hiring recommendations, and recommended collaborations with internal and external partners.

As stated previously, another Fulltime faculty member is required to sustain the effectiveness and quality of not only the BAS, but the AAS in Construction Management. Articulation Agreements have been established with the local high schools; however, agreements between WNC and TMCC are still hazy.

Promotion of the BAS at TMCC would help FTE within the BAS program. A specialized computer drafting/estimating course is offered this semester (Fall 2021), and this class should be offered as a substitute course for CADD 100, instead of an Elective.

- d. Program successes and recommended action to continue or expand those successes.

JumpStart in Construction management was poorly marketed in the past. With the popularity of the trades, the revitalization of this program would feed as a pipeline for the BAS program.

Open Entry has proven to be very popular. Creating opportunities for a 100% online option for the BAS required course is in the works. There are a couple courses offered that require access to computer programs; such as, CADD, Microsoft Project that impede the reality of offering a fully online degree.

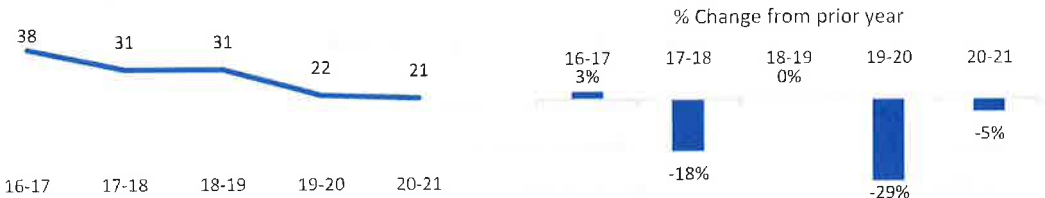
- e. Proposed program changes or adjustments, including but not limited to changes in program student learning outcomes, recommended curriculum changes or adjustments, changes to degrees/certificates offered, opportunities for program expansion or streamlining, proposed changes to program modality (e.g., offering distance learning or expanding online offerings), etc.

- i. Expanding the amount of Open Entry classes in the program will capture more working and busy individuals.
- ii. Providing Construction College credits for the Prison system’s Carpentry shop.
- iii. Offering more “Skills Certificates”; ie Pre-Engineering and a “Scheduling Specialist” Skills cert for learning Microsoft Project and Primavera (P6).

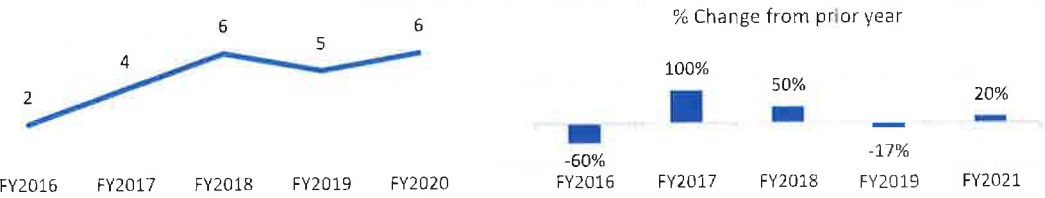
Bachelors of Applied Science, Construction Project Management								
Student Learning Outcomes Matrix								
Construction Project Management BAS Degree								
Outcomes*								
1	Identify, describe, and apply information, theories, methodologies and approaches from the Construction industry.							
2	Write effective projects, papers, and reports associated with Construction documents.							
3	Present accurate calculations and symbolic operations, and explain how such calculations and operations are used in either the field or in interpreting information in the Construction trades.							
4	Locate, evaluate, and appropriately use information from multiple resources; such as Architects, Engineers, and Tradesmen to complete projects, activities, and papers.							
5	Describe diverse historical and/or contemporary positions on selected democratic values or practices, and how they relate to the Construction industry.							
6	Integrate knowledge and skills from the study of sciences, mathematics, social sciences, and the humanities/arts to think critically about and develop qualitative and quantitative literacy to accomplish cumulative Construction tasks.							
7	Identify, describe, and apply information in the Construction field sufficient for further study and/ or demonstrate competencies required to succeed in the workplace.							
Required Courses		Outcomes						
Course #	Name	1	2	3	4	5	6	7
CADD 100	Computer Aided Drafting	X		X				X
CEM 100	Fund. Of Cons. Management	X			X			X
CONS 111	Intro to Building Codes				X			X
CONS 108	Construction Methods & Materials I	X			X			X
CONS 109	Construction Methods & Materials II	X			X			X
CONS 118	Construction Contract Documents	X	X				X	X
CONS 120	Blueprint Reading and Specs	X		X	X		X	
CONS 121	Principles of Construction Estimating	X	X					X
CONS 205	Construction Site Safety	X	X		X			X
CONS 281	Construction Planning & Scheduling	X	X		X		X	X
CONS 290	Internship in Construction	X	X					X
SUR 119	Construction Surveying	X	X		X	X		X
CEM 330	Soils and Foundations for Construction	X					X	X
CEM 350	Facility Systems Design and Construction	X			X			X
CEM 432	Temporary Structures	X	X	X	X			X
CEM 451	Advanced Construction Estimating	X		X			X	X
CEM 452	Construction Cost Control	X		X	X	X	X	X
CEM 453	Advanced Construction Scheduling	X	X		X		X	X
CEM 454	Heavy Construction Methods and Materials	X		X	X			X
CEM 455	Construction Management	X			X			X
CEM 456	Construction Management Capstone	X					X	X
CEM 485	Construction Law and Contracts	X			X	X		X
CONS 451	Advanced Internship in Construction	X	X					X

WNC Program Review Metrics - Bachelor's of Applied Science in Construction Management

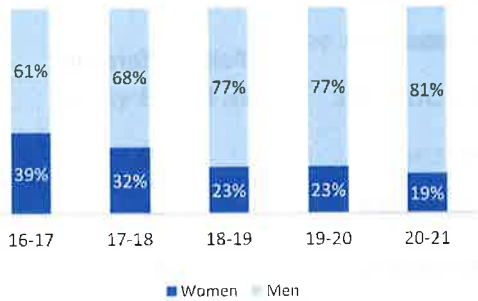
Program Majors Enrolled by Academic Year



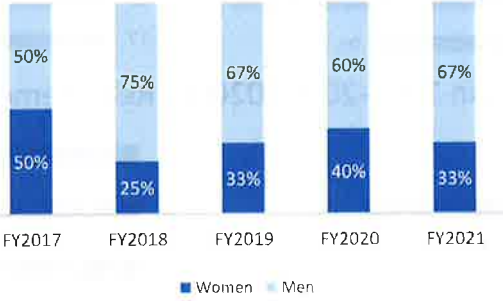
Degrees Awarded by Fiscal Year



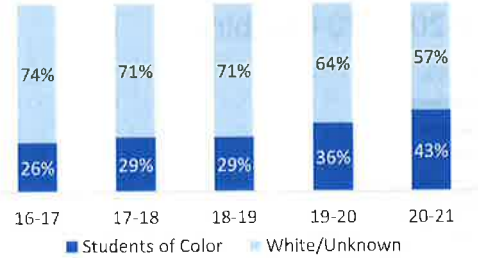
Program Majors Enrolled by Gender



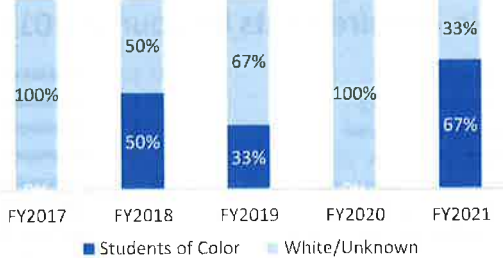
Degrees Awarded by Gender



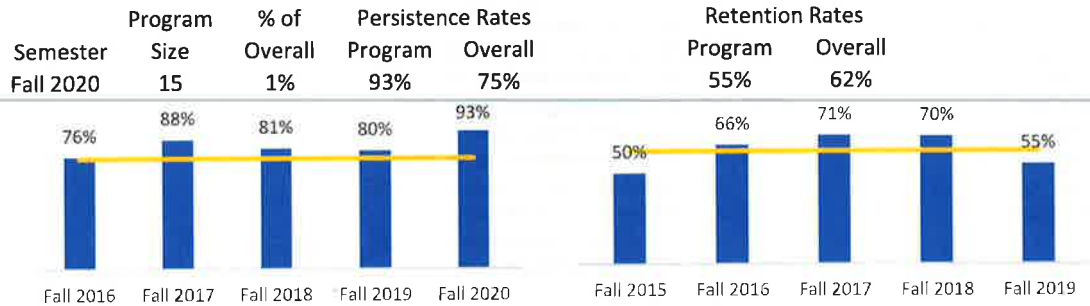
Program Majors Enrolled by Ethnic Status



Degrees Awarded by Ethnic Status

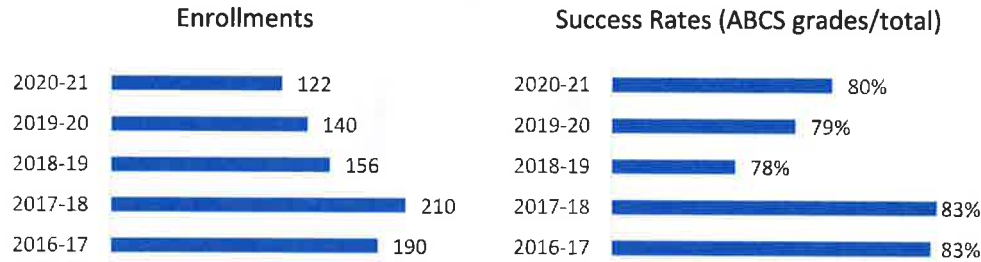


Fall-to-spring Persistence and Fall-to-fall Retention Rates for Degree or Certificate-seeking Students by Fall Semester



Program Review Metrics - BAS Construction Management Course Success Rates

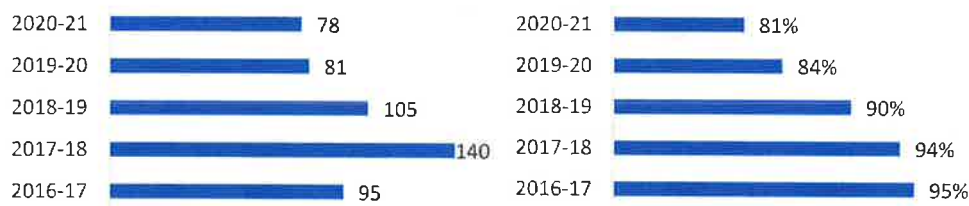
Program Majors in All Courses by Academic Year



Point Difference
20-21 Success
Rate vs. Earliest 3-
yr Avg

-1.3

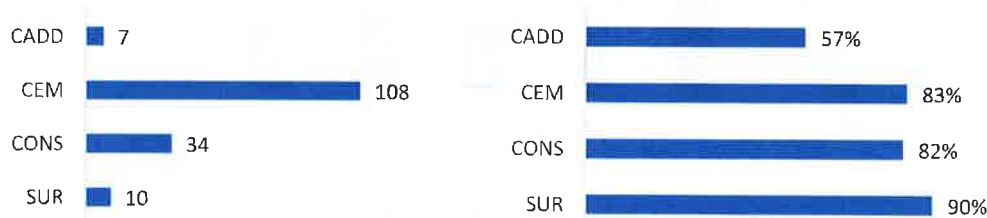
Program Majors in Program Requirements by Academic Year



Point Difference
vs. Early 3-yr Avg

-11.9

Program Majors in 2019-20 & 2020-21 Requirements by Subject



Point Difference
vs. Early 3-yr Avg

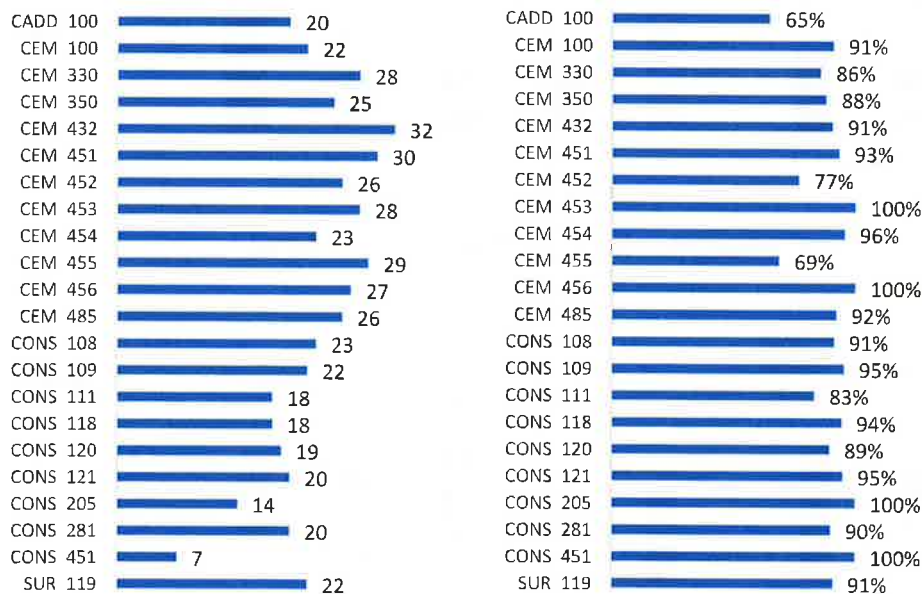
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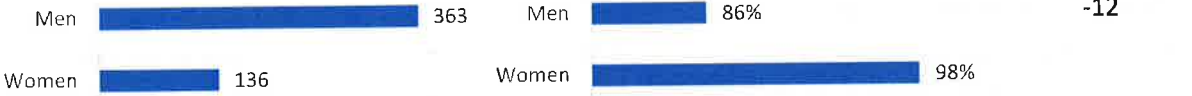
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Program Majors in Requirements by Course, 2015-16 to 2019-20 Combined

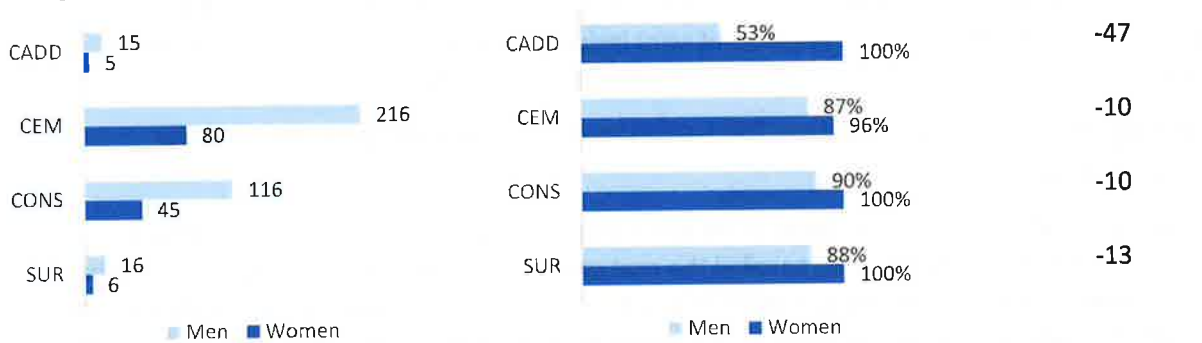


Program Review Metrics - BAS Construction Management Course Success Rates Continued

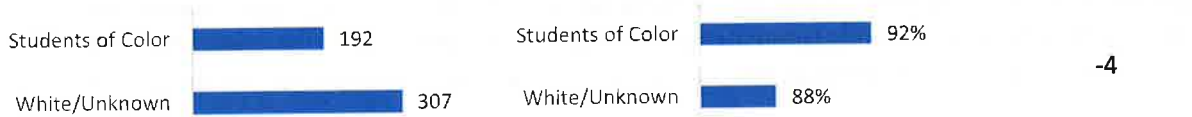
Program Majors in Program Requirements by Gender, 2016-17 to 2020-21 Combined



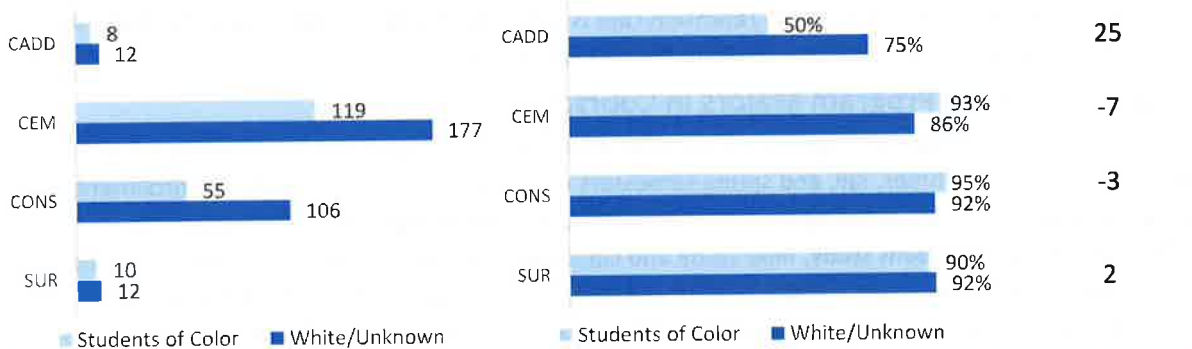
Program Majors in Requirements by Gender and Subject



Program Majors in Program Requirements by Ethnic Status, 2016-17 to 2020-21 Combined



Program Majors in Requirements by Ethnic Status and Subject



Documentation on Program Review Metrics

Program Majors Enrolled by Academic Year

This is a unique headcount of all declared majors in the program as of 12/1 for fall, 5/1 for spring and 8/25 for summer semesters. Students are considered to be enrolled even if they have W grades as a result of withdrawing from one or all of their classes. Includes students in BAS and in BT Construction Management.

Degrees Awarded by Fiscal Year

This is the total number of awards (degrees and/or certificates) in this program during a fiscal year defined as summer, fall, and spring semesters. A fiscal year begins July 1 and ends June 30.

Program Majors Enrolled and Degrees Awarded by Gender and by Ethnic Status

These headcounts and award counts are the same as above but provide the detail by gender and by demographic groups within the program. Students of color include American Indian/Alaska Native, Asian, Black, Hispanic, Native Hawaiian/Pacific Islander, and two or more ethnicities.

Fall-to-spring Persistence and Fall-to-fall Retention Rates for All Degree-seeking Students by Fall Semester

The fall-to-spring persistence rate is calculated as the percentage of program majors enrolled at WNC in a given fall semester and who continue to be enrolled the next spring or receive a program degree during that fall semester. Students must be enrolled as a program major as of 12/1 to be included. Other metrics include the most recent fall semester for the calculation, the number of students in the program (Program Size), the relative size of the program (% of Overall) to all degree-seeking students enrolled, the most recent persistence rate, and the overall persistence rate for all degree or certificate-seeking students enrolled during the most recent fall semester. All data include both part-time and full-time students, new and continuing students as well as students in high school. Because students are required to have an associate degree or at least 30 college-level credits before being accepted into the BAS Construction major, the Persistence, Retention, and Graduation Rates Dashboards on new students in WestNet cannot be used here.

The fall-to-fall retention rate is calculated on the same population of students defined above as the percentage who continue to be enrolled the next fall semester or receive a program award during their first year prior to the next fall semester. The overall retention rate is for all degree or certificate-seeking students enrolled during the most recent fall semester available for this calculation.

Course Success Rates for Program Majors in Courses

This is calculated as the percentage of program majors who received a C- or higher grade, including a P or S grade in their classes during summer, fall, and spring semesters of a given year. Data include all enrollments in group classes with a final grade, including incompletes, audits, and withdrawals, as of the end of the semester. Excluded are independent study, field study and clinical nursing classes. Course success rates are provided for the most recent five years and the rate for the most recent year, or most recent two-year average, is compared to the earliest three-year average to assess any improvements over time as a measure of the difference in percentage points. Additional information is provided comparing course success rates in program requirements for men and women and for students of color (SOC) and white or unknown (Non-SOC) students. Students of color include those identifying as Native American/Alaska Native, Asian, Black, Hispanic, Pacific Islander/Native Hawaiian, and two or more ethnicities. These comparisons are to help identify potential achievement gaps between these major groups. Additional information can be found by exploring the Course Success Dashboard in WestNet.

BAS Construction Management Program Review Student Survey

Prepared 07/22/21 by Mandy Billings, Planning and Assessment Coordinator, IRE

This report contains:

1. Survey Population and Response Rate Summary (p. 1)
2. Full Results (pp. 2-15)

Survey Population and Response Rate

Population Surveyed: All current BAS Construction Management students and recent (2019 and 2020) BAS Construction Management graduates.

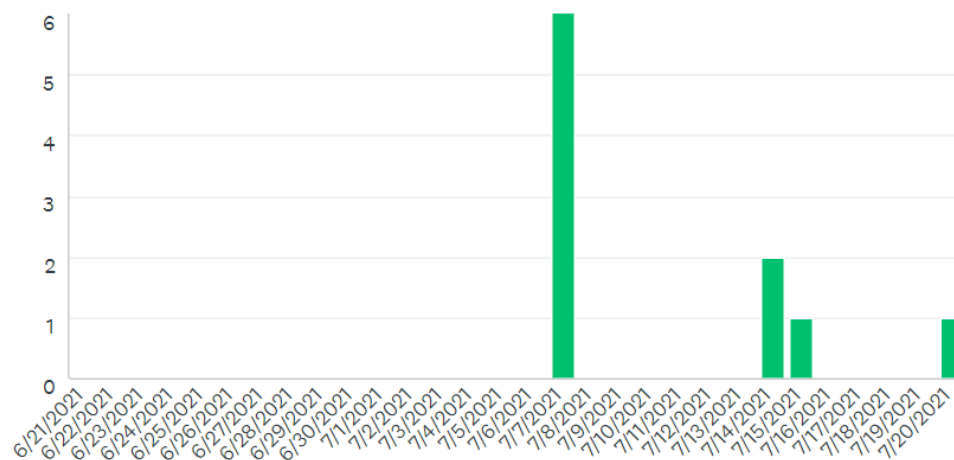
- 14 recent graduates
- 15 current students
 - Note: One student was excluded due to incorrect email address (email bounce back).

Response Rate:

- 21% (6/28) Complete Responses
- 36% (10/28) Partial Responses

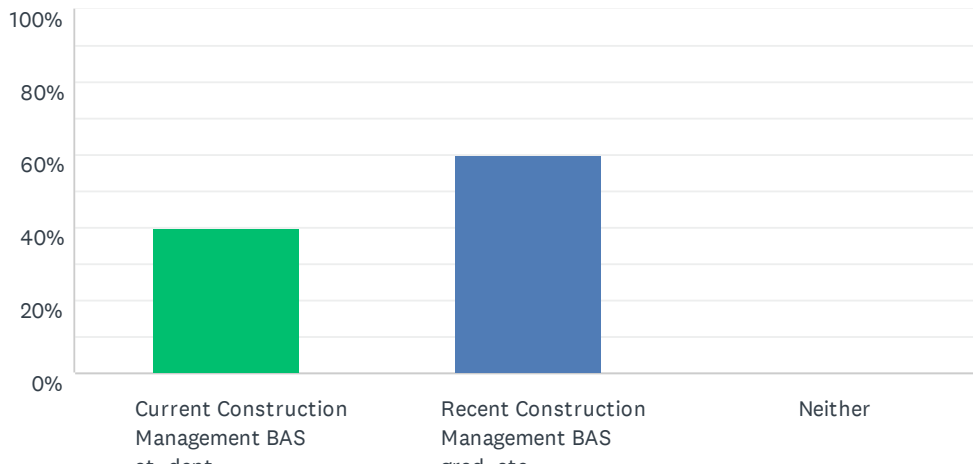
Responses (by day)

First: 7/7/2021 Zoom: 6/21/2021 to 7/20/2021



Q1 Are you a current Construction Management BAS student or recent Construction Management BAS graduate?

Answered: 10 Skipped: 0



ANSWER CHOICES	RESPONSES	
Current Construction Management BAS student	40.00%	4
Recent Construction Management BAS graduate	60.00%	6
Neither	0.00%	0
TOTAL		10

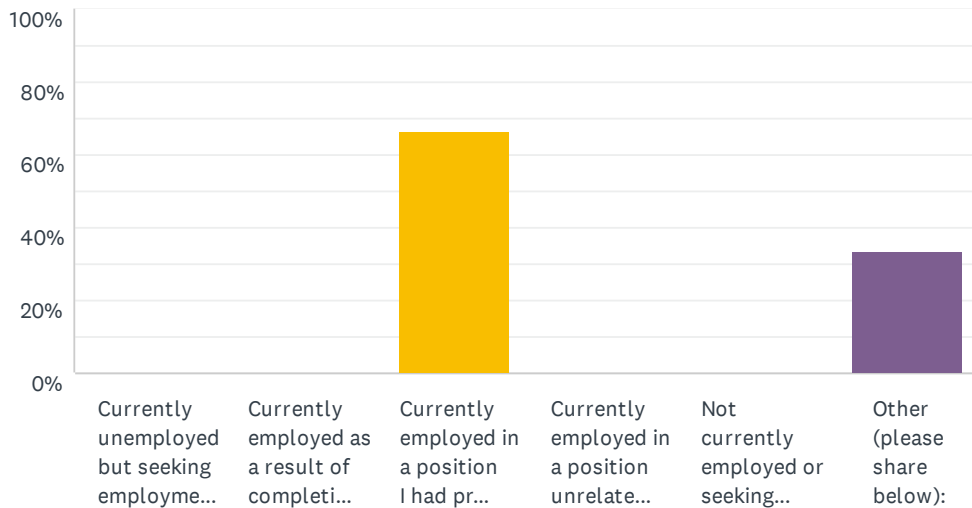
Q2 You indicated you are a current Construction Management BAS student. What are your plans after completing the program? This might be working at a specific company, pursuing a specific kind of job role, or continuing additional education or training. Please share your plans below.

Answered: 3 Skipped: 7

#	RESPONSES	DATE
1	Getting my masters degree	7/15/2021 9:17 AM
2	Project engineer or Home Inspections	7/14/2021 1:15 PM
3	Working for a well known company	7/7/2021 1:56 PM

Q3 You indicated that you are a recent Construction Management BAS graduate. Which best describes your current employment situation?

Answered: 6 Skipped: 4



ANSWER CHOICES	RESPONSES
Currently unemployed but seeking employment.	0.00% 0
Currently employed as a result of completing the Construction BAS program.	0.00% 0
Currently employed in a position I had prior to graduating from the Construction BAS program.	66.67% 4
Currently employed in a position unrelated to the Construction BAS program.	0.00% 0
Not currently employed or seeking employment.	0.00% 0
Other (please share below):	33.33% 2
TOTAL	6

#	OTHER (PLEASE SHARE BELOW):	DATE
1	Remodeling a home	7/20/2021 10:16 AM
2	Employed but seeking graduate degree in architecture	7/7/2021 4:01 PM

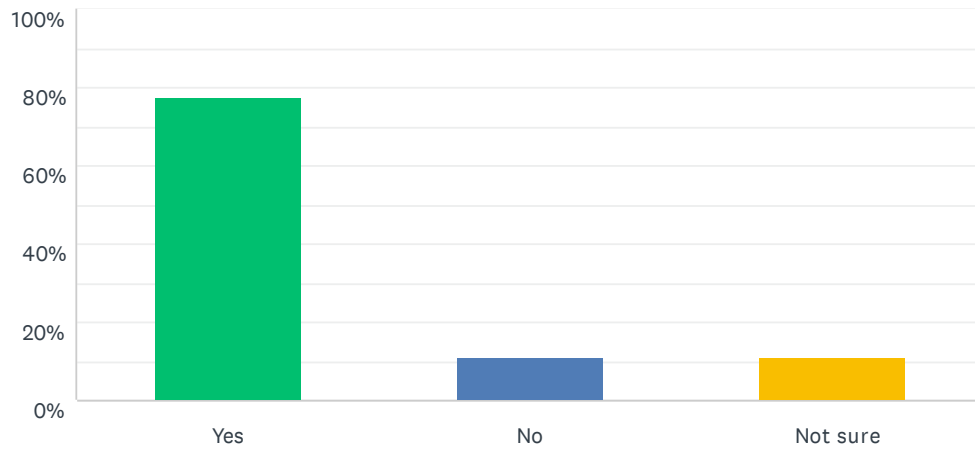
Q4 OPTIONAL: If you are currently employed, please share your job title and place of employment below.

Answered: 4 Skipped: 6

#	RESPONSES	DATE
1	Engineering Technician @ Southwest Gas Corporation	7/14/2021 3:06 PM
2	Project manager - Holm Construction, Incline Village	7/7/2021 4:01 PM
3	Staff II Associate Engineer. Was promoted to this position upon graduation with my BAS degree	7/7/2021 2:22 PM
4	CEO Copious Interests Inc Construction	7/7/2021 2:14 PM

Q5 Are facilities, labs, and technology used in the program appropriate and up-to-date?

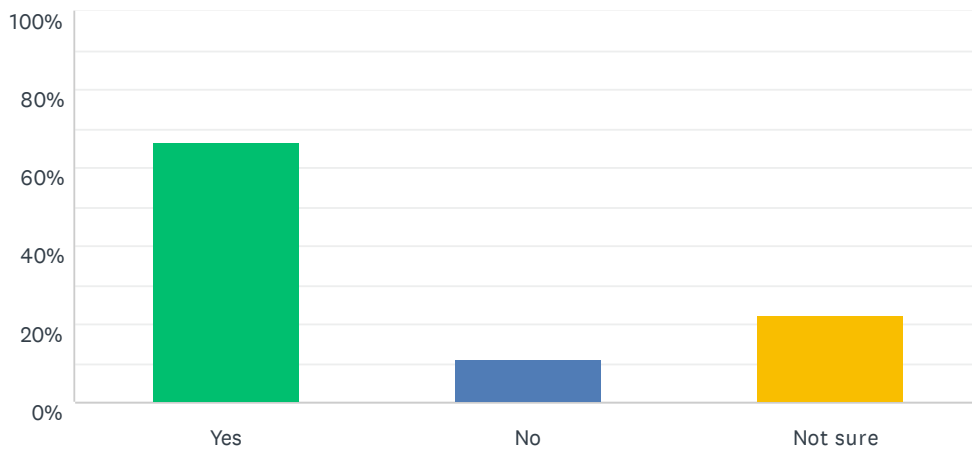
Answered: 9 Skipped: 1



ANSWER CHOICES	RESPONSES	
Yes	77.78%	7
No	11.11%	1
Not sure	11.11%	1
TOTAL		9

Q6 Is the content in the classes, such as readings, articles, lecture materials, etc., current and up-to-date?

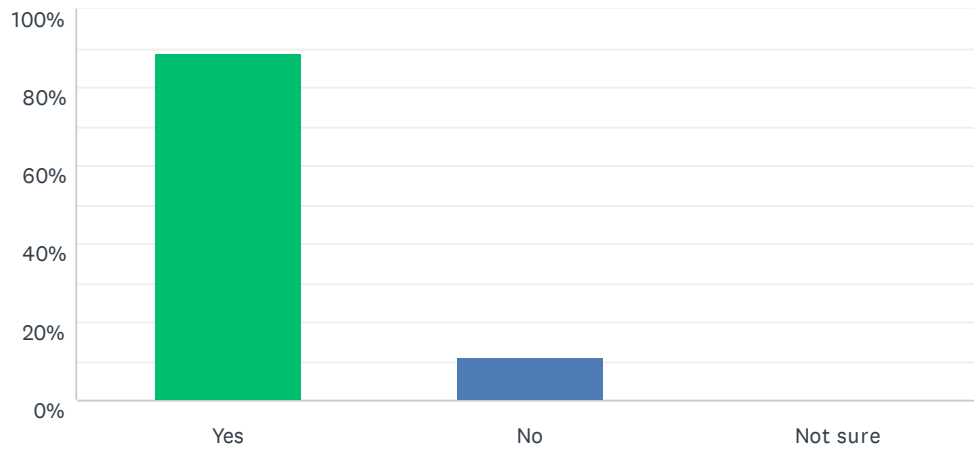
Answered: 9 Skipped: 1



ANSWER CHOICES	RESPONSES	
Yes	66.67%	6
No	11.11%	1
Not sure	22.22%	2
TOTAL		9

Q7 Is there fair and equal access to the program? (Are there any issues with registration, financial aid, counseling, or access to instructors?)

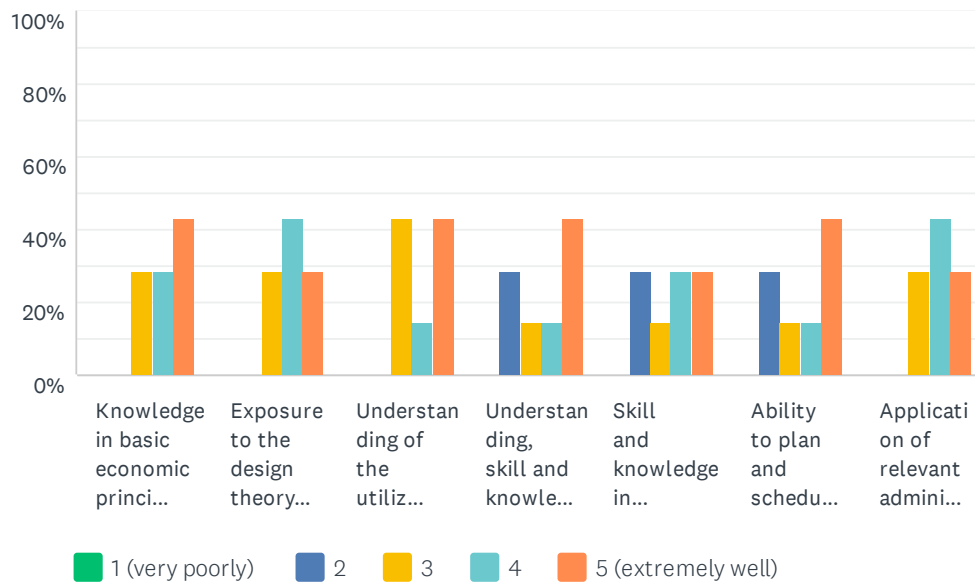
Answered: 9 Skipped: 1



ANSWER CHOICES	RESPONSES	
Yes	88.89%	8
No	11.11%	1
Not sure	0.00%	0
TOTAL		9

Q8 Please rate how well the Construction Management BAS program has helped you achieve the following program learning outcomes using a scale of 1-5, where 1 would be very poorly and 5 would be extremely well.

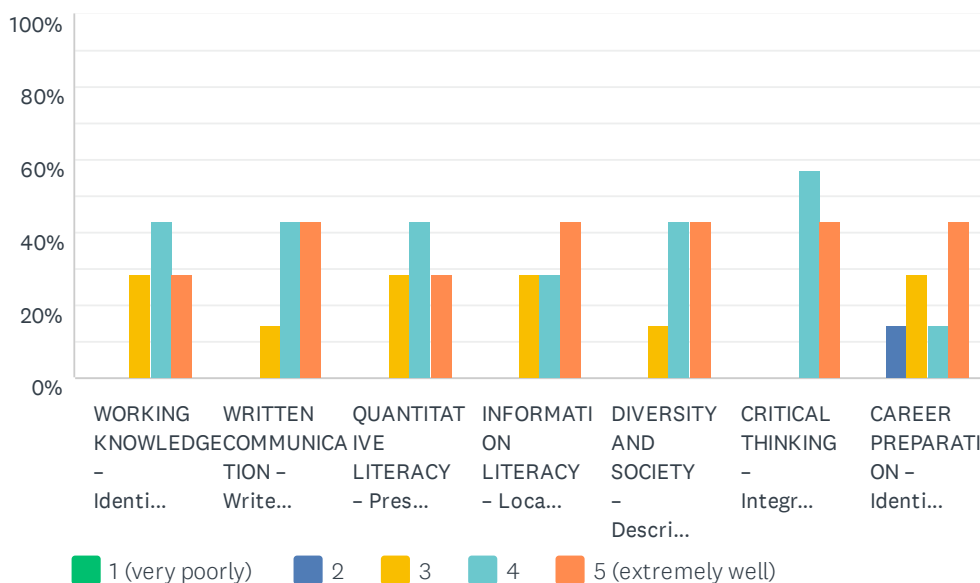
Answered: 7 Skipped: 3



	1 (VERY POORLY)	2	3	4	5 (EXTREMELY WELL)	TOTAL	WEIGHTED AVERAGE
Knowledge in basic economic principles, business principles and construction accounting, finances and law.	0.00% 0	0.00% 0	28.57% 2	28.57% 2	42.86% 3	7	4.14
Exposure to the design theory and analysis of construction practices and systems.	0.00% 0	0.00% 0	28.57% 2	42.86% 3	28.57% 2	7	4.00
Understanding of the utilization of available resources for construction planning, methods and materials.	0.00% 0	0.00% 0	42.86% 3	14.29% 1	42.86% 3	7	4.00
Understanding, skill and knowledge of construction documents, communications, graphics and surveying.	0.00% 0	28.57% 2	14.29% 1	14.29% 1	42.86% 3	7	3.71
Skill and knowledge in construction accounting, estimating and bidding practices.	0.00% 0	28.57% 2	14.29% 1	28.57% 2	28.57% 2	7	3.57
Ability to plan and schedule construction projects.	0.00% 0	28.57% 2	14.29% 1	14.29% 1	42.86% 3	7	3.71
Application of relevant administrative skills, ethics, safety practices and problem-solving techniques to construction management.	0.00% 0	0.00% 0	28.57% 2	42.86% 3	28.57% 2	7	4.00

Q9 WNC has the following institutional learning outcomes for all students completing degree programs. Please rate how well the Construction Management BAS program has helped you achieve these institutional learning outcomes using a scale of 1-5, where 1 would be very poorly and 5 would be extremely well.

Answered: 7 Skipped: 3



	1 (VERY POORLY)	2	3	4	5 (EXTREMELY WELL)	TOTAL	WEIGHTED AVERAGE
WORKING KNOWLEDGE– Identify, describe, and apply information, theories, methodologies and approaches from the sciences, social sciences, and humanities/arts.	0.00% 0	0.00% 0	28.57% 2	42.86% 3	28.57% 2	7	4.00
WRITTEN COMMUNICATION – Write effective projects, papers, and reports.	0.00% 0	0.00% 0	14.29% 1	42.86% 3	42.86% 3	7	4.29
QUANTITATIVE LITERACY – Present accurate calculations and symbolic operations, and explain how such calculations and operations are used in either the specific field of study or in interpreting information in other fields.	0.00% 0	0.00% 0	28.57% 2	42.86% 3	28.57% 2	7	4.00
INFORMATION LITERACY – Locate, evaluate, and appropriately use information from multiple resources to complete projects, activities, and papers.	0.00% 0	0.00% 0	28.57% 2	28.57% 2	42.86% 3	7	4.14
DIVERSITY AND SOCIETY – Describe diverse historical and/or contemporary positions on selected democratic values or practices.	0.00% 0	0.00% 0	14.29% 1	42.86% 3	42.86% 3	7	4.29
CRITICAL THINKING – Integrate knowledge and skills from the study of sciences, mathematics, social sciences, and the humanities/arts to think critically about and develop solutions to contemporary and/or enduring problems.	0.00% 0	0.00% 0	0.00% 0	57.14% 4	42.86% 3	7	4.43
CAREER PREPARATION – Identify, describe, and apply information in the discipline or career area of their choice sufficient for further study and/ or demonstrate competencies required to succeed in the workplace.	0.00% 0	14.29% 1	28.57% 2	14.29% 1	42.86% 3	7	3.86

Q10 Are there parts of the program that have had a positive impact on your learning and future success? Please explain below.

Answered: 6 Skipped: 4

#	RESPONSES	DATE
1	Discipline, and seeking answers	7/20/2021 10:18 AM
2	I have been extremely happy with my learning experience at WNC especially with Professor Nigel Harrison	7/15/2021 9:24 AM
3	Nigel is an amazing instructor	7/14/2021 1:17 PM
4	The BAS program has inspired me to continue my education and pursue a Masters degree in architecture from the University of Oregon. My BAS has been a great foundation for growing academically and professionally.	7/7/2021 4:14 PM
5	Ford and Harrison excellent instructors.	7/7/2021 2:18 PM
6	Having an instructor like Nigel Harrison has been very helpful in succeeding in this program. He's always available for any questions and concerns that I may have. He's one of the best!	7/7/2021 2:06 PM

Q11 Are there parts of the program that have had a negative impact on your learning and future success? Please explain below.

Answered: 5 Skipped: 5

#	RESPONSES	DATE
1	no	7/20/2021 10:18 AM
2	No I have enjoyed every part of my experience at wnc	7/15/2021 9:24 AM
3	Scheduling of classes is tough	7/14/2021 1:17 PM
4	NO	7/7/2021 2:18 PM
5	A negative impact that I experienced during the program was when taking an estimating course with Sharon Morgan. It is tough to comprehend the material when the instructor lacks knowledge on the material. I met with her in person to try to find the solutions and even then she did not know how to find the correct answers for her assignments.	7/7/2021 2:06 PM

Q12 Do you have any suggestions for how the program could improve? Please share below.

Answered: 6 Skipped: 4

#	RESPONSES	DATE
1	Learning about the permit process. This should be an entire class.	7/20/2021 10:19 AM
2	I believe you guys have it all figured out thank you for everything you do	7/15/2021 9:26 AM
3	No	7/14/2021 1:17 PM
4	Ensuring that classes are available for every semester they are scheduled to be available.	7/7/2021 4:18 PM
5	Hands on work experience is needed. It is pain full to see graduates from this program that do not know the difference between a finish hammer and a framing hammer. You must have experience working in a construction crew to be able to run one. Professor Harrison's building projects at WNC helps.	7/7/2021 2:21 PM
6	More information on apprenticeship.	7/7/2021 2:08 PM

Q13 Do you have any suggestions for how WNC could improve its service to students? Please share below.

Answered: 5 Skipped: 5

#	RESPONSES	DATE
1	no	7/20/2021 10:19 AM
2	You are doing everything perfect	7/15/2021 9:26 AM
3	No	7/14/2021 1:17 PM
4	I didn't have any issues with WNC's service	7/7/2021 4:18 PM
5	Hands on work experience is needed. Also hands on construction estimating.	7/7/2021 2:21 PM



August 27, 2021

Western Nevada College
Construction Project Management
2201 W. College Parkway
Carson City, NV 89703

Dear Mr. Harrison,

Southwest Gas Corporation (SWG) is committed to improving the communities we serve. As a major Nevada employer, we take great pride in helping to educate and train the next generation of workers. SWG has proudly partnered with Western Nevada College (WNC) for many years. During this time, the Company has regularly hired interns from the Construction Project Management Program. This partnership allows the interns to get hands-on experience in the natural gas industry while they complete their degree. The education that the interns bring to SWG gives them a solid understanding of the construction field, while SWG provides them the real-world experience in areas that are not necessarily highlighted in school.

In our experience, the interns from the WNC Construction Project Management Program are well-educated, prepared and eager to learn. These people are dedicated, coachable and capable contributors. WNC does an excellent job in preparing them for actual workplace experiences. It has been our privilege to offer all our former interns full-time employment, either with SWG or one of our pipeline construction contractors, in a variety of opportunities. These roles include a District Technician in South Lake Tahoe, which is a highly regarded position in that they must be qualified to complete both customer service and construction work in the field. Another intern serves as an Energy Analyst, who assists new and existing SWG customers in getting the appropriate natural gas facilities to best serve their home or business. Recently, another intern successfully obtained an Engineering Technician position. He is responsible for the design and construction of new pipelines and the replacement of aging infrastructure throughout northern Nevada and northern California.

We are honored to partner with WNC and appreciate the role they play in preparing qualified and talented people who will help build up our community, not only with SWG but with many organizations in the region.

Our relationship with WNC has expanded beyond internships over recent years. We have fostered a key relationship with the WNC Foundation and have contributed \$25,000 over the past five years to help further their objectives. We also donate welding equipment on occasion to assist in creating a learning environment on campus with practical applications to further

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prepare students for real-life opportunities. We have appreciated the invitations for some of our leaders to attend department advisory meetings to better understand the goals of the College and how we can align efforts to achieve mutual success. We are now pursuing opportunities to create certificate programs with WNC where our leaders, and those of our contractors, can collaborate with WNC instructors to teach students the specific skills and abilities needed to succeed in our industry.

These relationships and collaboration with WNC have resulted, in large part, due to our early affiliation with the Construction Project Management internship initiative.

We look forward to this continued partnership in shaping tomorrow's workforce and strengthening the community.

Regards,

Bradford T. Harris
Vice President / California & Northern Nevada Divisions

Curriculum Review Report

Bachelor of Technology

Fall 2015

- 1) Mission Statement - The mission of the Bachelor of Technology degree in Construction Management is to prepare students for entry level and mid-level positions within the various construction industry disciplines, and to meet the goals of the Technology Division.

Student Learning Outcomes:

- Knowledge in basic economic principals, business principals and construction accounting, finances, and law
 - Exposure to the design theory and analysis of construction practices and systems
 - Understanding of the utilization of available resources for construction planning, methods and materials
 - Understanding, skill and knowledge of construction documents, communications, graphics, and surveying
 - Skill and knowledge in construction estimating and bidding practices
 - Ability for planning and scheduling a construction project
 - Application of relevant administrative skills, ethics, safety practices, and problem solving techniques to construction management
- 2) Since the fall 2010 semester there were limited changes made to the original curriculum developed when the program was implemented. The majority of the lower level 100 and 200 courses were focused on trade skills that did not provide the necessary management instruction to prepare those students interested in continuing into the four year degree. The four year degree curriculum was a combination of civil engineering and construction management courses that when combined did not provide the necessary management instruction to provide the students the necessary fundamental knowledge to excel in a construction management career. Since the turn of the century the construction industry has changed drastically becoming more technology focused and management based. Compared to programs across the country it is apparent changes are necessary before this curriculum will satisfy the current management needs of the industry.
 - 3) According to the data received from Institutional Research a clear sequence of course offerings has not been maintained. Students have been allowed to enroll in any course that fit their schedules even if pre-requisites were not met. Low enrollment numbers could be to blame but one apparent problem is the lack of planning by past faculty or administrators. It is very important to provide students a structured sequence of course offerings so they can develop a path through the curriculum that allows them to complete the requirements in a timely manner. The faculty are in the process of developing a set of sequenced course offerings that will allow the students to follow prerequisite requirements. This should build cohesion between course offerings and allow completion of the degree on time.

- 4) There is no evidence that courses have been scheduled in a manner that allows students to complete the program in a timely manner. According to the data provided by Institutional Research courses were offered in a random fashion. The faculty related to the program are in the process of developing an eight semester schedule that will be locked into place in fall 2016. Currently, the course requirements are being changed to meet the needs of the accreditation process and after the changes are adopted the program will follow a set schedule that will benefit students and hopefully enhance retention rates.
- 5) There is no history available concerning any formal review process for required or recommended courses related to this program.
- 6) There is no history available concerning any formal review of the general requirements associated with this program.
- 7) The catalog information associated with this program has only changed when new courses were added to the requirements. The current 2015-2016 catalog includes the lower level 100-200 course changes approved fall 2014. The faculty associated with this program is in the process of completing the necessary course changes to meet accreditation requirements and will be identified in the 2016-2017 catalog.
- 8) Attach course outlines associated with this program
- 9) Although a requirement for course syllabi, there is no evidence of a programmatic focus on information literacy at this time. The library provides a huge selection of old text books, industry related videos and other resources that can provide students additional learning opportunities when necessary.

PARC Academic Program Review Commendations and Recommendations Form

Academic Program: AAS Technology

Date of Last Review: N/A (first time for combined review)

Review Presentation Date: Jan. 31, 2019

Commendations:

- PARC recognizes and commends academic faculty from all represented areas within the larger AAS Technology degree program for completing a joint program review for the first time.
- Emphasis across all areas on soft skills demonstrates added value to WNC students. PARC appreciated this discussion and the specific examples of how soft skills are taught across disciplines.
- Each program area efficiently communicated program highlights, such as strong enrollment numbers and industry connections, and ongoing opportunities for improvement, such as expanding course offerings.
- Excellent evidence of connections with area industry and plans to continue to grow and use these connections.

Recommendations:

- PARC supports the recommendations discussed during the presentation and exit interview, which include:
 - Working with outreach staff campus-wide to support expanded outreach efforts.
 - Creating a full-time outreach position, especially in support of connecting with nontraditional/adult/returning/part-time student populations.
 - Reviewing curriculum and course offerings within certain areas to match student interest and changing professional pathways (such as an increased emphasis on security within the area of Computer Information Technology).
 - Exploring the creation of a Soft Skills certificate.
- PARC recommends that the Technology Program Review Team submit the final Internal Reviewer Report, External Reviewer Report, and standard Five-Year Action Plan as the final portion of their 2018 Academic Program Review.
- PARC recommends that progress toward positive program developments and plans discussed in the presentation and exit interview be included in the forthcoming May 2019 Program Update Report and the November 2019 Annual Program Assessment Report. These reports are part of WNC's new planning and assessment cycles, and will be completed by the CTE Assessment and Planning Lead Faculty.

- PARC recommends better tracking “job upgrade” students who are not seeking degrees or certificates. As a part of this effort, programs could communicate with industry partners about their preference for students who can demonstrate competency and skills in specific areas (those taking a collection of courses as a “job upgrade”) vs. those who complete full degree programs.

Next Steps:

- In accordance with PARC’s program review guidelines, please submit final Five-Year Action/Assessment Plan and final internal and external reviewer reports to PARC by **Wednesday, May 15** (two months from date of receiving this Commendations and Recommendations document).

August 16, 2021

Internal Reviewer's Report

Program Review

Construction Management

Internal Reviewer:

Gregory Sly

WNC Perkins Grant Manager / CTE College Credit Coordinator

Adjunct Instructor for Criminal Justice (WNC & TMCC)

WNC PAT Division

Program:

- Bachelor of Applied Science Construction Management

Internal Review Processes Completed:

- Review of assigned Program Review Report (2021)
- Review of BAS Construction Mgt Program Review Student Survey (2021)
- Review of Course Catalog
- Review of Canvas Courses / Curriculum
- Interview of Nigel Harrison, Professor
- Interview of Dr. Georgia White, PAT Division Director
- Review of Program Outreach Video
- Review of WNC Institutional Research Dashboards for Construction Mgt. / Data
- Interview of incoming Construction Mgt. student
- Interview of Regional Home Inspector (industry partner) familiar with program
- Review of prior Construction Mgt. program review documents (2015)

Program Observations / Impressions:

- Course Catalog Review
 - Stated Mission and Student Learning Outcomes were clear and aligned to an Applied Science degree path, preparing students for the workplace / industry.
 - Suggested Course Sequence is set for a Fall semester start, thus may not work for a Spring semester starting student. This is often due to the college's inability to present all courses each semester, limited instructor FTEs, and limited number of students in the program.

- Extensive 66-unit course requirement (in program).
- Business requirements do not require Business Law, however such is adequately covered in program by CEM 485, Construction Law and Contracts.
- Math requirement placed in first semester which is good preparation for later program requirements.
- Canvas Review
 - Syllabi
 - Courses each have a well-developed Syllabus covering all areas required by college policy and meeting the needs of students participating in courses.
 - Grading policy in some courses needs letter grade clarification.
 - Curriculum
 - Clearly presented chapters, quizzes, and discussions formats.
 - Module driven curriculum with power point presentations, quizzes, and graded discussions with student-to-student interaction.
 - Open entry / exit course provisions a positive for working students.
 - Majority of courses are provided online, positive for working students in construction field.
- Program Data Review
 - Program students reduced by 34% from 2019 to 2020, presumably due to COVID-19 Pandemic interruptions and challenges.
 - 2020 program had 26% rate of female students. This could increase, but is higher than each of WNC's other PAT Trades programs. In SP21 enrollment share increased to 33.3% female students.
 - FA20 and SP21 combined course completion rates for this program: 84%. Slightly over the mid-range for all WNC PAT program completion rates.
 - FA20 and SP21 Construction Gateway Skill Certificates: 5 awarded.
- Articulation of Credits Opportunity
 - Multiple high school CTE programs can lead to Articulated Credit for BUS 101.
 - High school students completing CTE Construction Technology programs (with required certificates) may earn credit for five courses (16 credits) directly listed in this degree's program requirements. Great opportunity and recruitment tool.
- Review of Previous Program Review
 - Last Program Review for this degree program was in 2015.
 - Suggested 2+2 agreement with TMCC
 - Online pathway for entire program not met as lab courses require in person coursework.
 - Expanded community outreach and recruitment recommended and still needed.
 - Enrollment trends can be increased with additional outreach assistance to program by college and industry advisory board representation.

Program Strengths:

- All individuals interviewed view the program and instructor very positively. Lead Professor is professional, dedicated, student supporting, and devoted to program success and expansion.
- Program is expanding to prison educational offerings to present opportunity for offender rehabilitation and work opportunities in construction trades.
- Field practice for students completing residential home inspections and completing reports a positive.
- Large lab space for practical instruction is available.
- Extensive Canvas profile for course support and online instruction.
- Large catalog of program courses supporting Applied Science goals and objectives.

Program Challenges:

- Only one full time instructor
 - With the number of courses designed, offered, and maintained, the workload is very demanding for one instructor.
- Number of students does not support continuous course offerings which presents challenges for students completing program on time.
- Program students report difficulty getting the classes when needed
 - Some classes are not offered each semester.
 - Classes are sometimes not provided when offered due to low enrollments.
 - Discussions reportedly occurring with TMCC to combine course availability to assist students in filling their schedules.

Program Needs:

- College provided expansion of activities for program outreach and student recruitment.
 - Promote pathways for students to professional construction employment not directly associated with construction laborer positions.
 - Increase student awareness of wide variety of positions/pathways this degree may support.
 - With increased student numbers, consider adding additional full-time instructor to program, which is much needed.

Opportunity / Recommended Next Steps:

- Expand Dual Credit opportunities at high schools, especially schools that currently have CTE Construction Technology.

- Expand community outreach efforts to increase student interest and enrollment, to meet regional demand for professional construction employment.
- Expand program Advisory Board involvement, to include remotely presented meetings during COVID closedown when in-person meetings are prohibited.
- Possibility of Certificate of Achievement
 - Stackable credentials plan
- Investigate possibilities for modifying Bachelor Degree requirements to accommodate Associate Degree transfer in with completion of BAS in four years.
 - Possible areas to combine courses lessening credit load requirements:
 - CEM 485 and CONS 118 - Contracts curriculum
 - CEM 451 and CONS 121 - Construction Estimating curriculum
 - CEM 453 and CONS 281- Scheduling curriculum
 - Eliminate at least one of two internship requirements in program

Summary / Departing Thoughts:

- As a four-year BAS program, with an AAS program and additional credentials / certifications, the workload presented for a single instructor is very challenging.
 - Review of program showed the dedication and hard work completed and ongoing for the assigned instructor facing a heavy workload.
- Program recommendations are provided in the evaluation of the program. However, assigning additional program work or modifications without the addition of a second program instructor position should be viewed as unattainable.

August 6, 2021

External Reviewer:

Cameron Ames

Licensed General Contractor- Specializing in new builds and remodels. Both in residential and small commercial. All scopes of work ranging from foundations to finish carpentry. All aspects of the General Contracting, plan and design, project management, drafting, scheduling, and all factors indicated in terms of license.

Program:

Bachelor of Applied Science degree in Construction Management

Program Strengths:

There are many benefits of the Bachelor of Applied Science degree in Construction Management that indicate the successful fulfillment of all skills needed to excel in project management and leadership. The instructor, Mr. Nigel Harrison, respectively, has the hands-on experience as well as the knowledge necessary to lead students in achieving the overall agenda of each course curriculum. To list just a few of the strong points, here they are:

1. Goal Oriented- each course sets goals to ensure students acquire the knack for setting appropriately smart goals. Teaching how to set specific daily, weekly, and long-term goals will provide students with a format of what they will need to do on a regular basis in order to stay focused on deadlines, project scheduling, and help others stay focused on final project completion.
2. Set proper expectations- upon reviewing each course and the curriculum associated with each, I feel that the instructor is preparing students appropriately to enter into their desired fields of construction management. Prepared, knowing exactly what to expect with each potential position within project management ranging from estimating accurately to assessing potential risks and delays.
3. Description of Methods- there are a few ways to gather the knowledge required to be successful in construction. To mention just two. First, the knowledge acquired through formal learning and educational courses. Learning how to read plans, estimating worksheets, and reading and understanding code enforcement. Second, is becoming hands-on. Put nail bags, learn the tools, explain function of use, be able to use tools in a journeyman fashion. This course outlines these methods very well. Following course instruction will prove that students will be ready to execute all scopes of construction successfully.

Overview:

As mentioned previously, I believe that the Bachelor of Applied Science degree in Construction Management will produce many leaders in the field of construction. The knowledge learned will prove to be effective in any type of construction ranging from roads, commercial, residential, or specific C class licensed subcontractors. The programs set realistic expectations of what will happen on a day to day routine in any line of construction. If curriculum is followed directly, if goals and objectives that are set, are achieved the WNC Bachelor of Applied Science degree in Construction Management will produce a fine generation of leaders in the construction industry.

Program Review Five Year Action Plan

PROGRAM NAME: BAS Construction Project Management

SUBMISSION DATE: 01 SEP 21

List major program goals, projects, and/or priorities below. Insert an **X** in the column of each year in which that goal or project will be worked on and/or achieved. In the last column, indicate how you will assess the success or completion of that goal.

Please note that there is no minimum or maximum number of goals. Remove or add rows as necessary.

Goal or Project	Year 1	Year 2	Year 3	Year 4	Year 5	Means of Assessment
Insert Year:	2021	2022	2023	2024	2025	
1. CONS 198: Special Topics (REVIT). Turn REVIT into a required course, with CADD 100 as the prerequisite.	X	X				Enrollment during Fall 21 semester must commence with 5+ students. End of course survey will determine future needs.
2. Create Open Entry (OE) options for 90% of the program's required courses.		X	X	X	X	1-2 new classes will be offered OE. This goal will continue as long as enrollment increases from the previous semester it was offered.
3. CONS 111: Building Codes was revamped for the Fall 2021 to mirror relevant code standards.	X	X				End of course evaluation will determine if the changes implemented are effective.
4. CONS 456: Capstone will be briefed to a construction Industry Leader to determine if the students will be effective in the real working world. One consideration is to implement a team approach or an individual approach.		X		X		End of course evaluation given by a Construction Industry Leader will determine the effectiveness of the Capstone Project.

Comments/Reflections (consider timeline for goals, resources needed, etc.):

Capstone – The capstone project simulates a construction project bid process. The student must use their business knowledge to develop a company business plan, determine insurance, bonding and financial needs, project estimate and schedule, and contract documents. The student must present their bid package in a professional manor in front of advisory board members and faculty.

Five Year Assessment Plan

Program Name: Bachelor of Applied Science – Construction Management

Submission Date: 10/01/2021

List the program outcomes and/or student learning outcomes and briefly describe the means of assessment for each one. Insert an “X” in the column of each year the outcome will be assessed.

Outcomes	Year 1	Year 2	Year 3	Year 4	Year 5	Means of Assessment
Year	2021	2022	2023	2024	2025	
CEM 100 – Pre-test student’s fundamental knowledge of the construction management process based on the program’s learning objectives.	X	X	X	X		Students will be given a multiple choice exam with 50 questions relating to the program’s student learning outcomes related to the construction industry
CONS 290 – Post-test student’s fundamental knowledge of the construction management process based on the program’s learning objectives.		X	X	X	X	Students will be given the same exam as given in CEM 100. Scores can be compared to determine a learning curve associated with SLO
CEM 456 – Post-test of all the required SLO associated with the four year degree including general studies, business, and management and construction courses.	X	X	X	X	X	Students are assigned a bid process project that follows the general requirements of an actual bid package. Learning will be measured based on realistic industry expectations, project presentation, and verifiable research content by the advisory board members

* Capstone – The capstone course requires students to combine all the student learning outcomes associated with all the required courses. They must develop a business plan, review drawings and complete an estimate and schedule for those drawings, determine contract, bonding and insurance requirements, then prepare a professional presentation to present their bid package to a group of advisory members.

** The Construction Gateway, Ramsdell Academy and AAS programs should be considered potential feeders for the BAS degree.