

Introduction

Executive Summary

This document contains all requested information in order to inform the UNM Gallup Campus Curriculum Committee of the status of the Certificate in Construction Technology program of study. This program has a long-standing history at the UNM Gallup Campus, offering education and training in a wide-ranging program of study preparing students to enter various occupations within the building and construction industries.

Included within this introductory section is a history of the Construction Technology Program and its organizational structure. The program of study is not accredited; however, its instructors utilize curricular materials through the National Center for Construction Education and Research (NCCER). This national entity provides online training and testing for faculty and students in a multitude of areas related to this discipline, and allows students to earn industry-recognized credentials. The Construction Technology program offers a course, NCCER Core that specifically deals with industry and discipline safety; students can earn a credential in this area through NCCER.

The division that houses Construction Technology, Business and Applied Technologies, has had four different division chairs within the past eight years. It once had two administrative assistants that were reassigned to other positions on the campus, and during this time an individual from the Center for Career and Technical Education was directed by the Interim Dean of Instruction to absorb the duties and responsibilities of these two individuals in addition to her normal function within the CCTE Program. Because of the numerous changes in personnel, the recent history and records are either scattered, missing, or destroyed, and it was rather difficult to get ahold of documents from previous divisional administration. That being said, this program review was assembled as best as it could with what materials and information were available.

Program of Study History

Construction Technology has been offering educational and training opportunities to students of UNM Gallup in order to serve a community need for trained and educated individuals to fill essential positions ranging from entry-level laborers to project site managers. The program of study offers students introductory and advanced levels of layout and framing, carpentry, plumbing, green building and sustainability, interior finishing, concrete pouring, and alternative construction methods.

The program of study currently offers a Certificate in Construction Technology as well as an Associate of Applied Science Degree in Construction Technology. These two offerings have been long-standing programs dating back to the early-1980 at the UNM Gallup Campus. The Center for Career and Technical Education (CCTE) has been offering course work in Construction Technology to its students since the 1980's providing students from eleven area secondary schools the opportunity to earn college credits while enrolled at a participating high school. This program, along with other CCTE offerings, began offering concurrent/dual credit to these students in the early-1990. This continues to this date, with one faculty member assigned to teach two four-credit courses to secondary students who are bussed to campus on a daily basis in order to participate in theoretical and hands-on learning experiences. Typically, CCTE students earn eight credit hours per semester, all of which articulate into the Certificate in Construction Technology and/or Associate of Applied Science Degree in Construction Technology at UNM Gallup.

Courses within Construction Technology were offered at the UNM Gallup Campus as well as the UNM Zuni Campus until a short time before that facility was separated from the UNM systems. Loren Leekela was employed as a full-time faculty member at that site and offered course sections to CCTE students from Zuni High School and college course sections to members of the Zuni Pueblo. Enrollment faltered and then-Dean of Instruction Kenneth Roberts determined that this program of study was no longer feasible to offer at the Zuni site. At that time, the full-time faculty member was reassigned as a half-time faculty member at the UNM Gallup Campus.

This program of study has transformed its certificate and degree plans in order to remain current within the construction industry. What began as "vocational education" has followed industry standards into "career and technical education," integrating hands-on learning and skills with academic skills (mathematics, language arts and communication, physical and natural sciences, social sciences and humanities) and employability skills. With technical skills grounded in academics, the students are gaining a great deal of applied learning experience – the theoretical underpinnings are presented and modeled by instructors, and students then have the opportunity to apply their knowledge with hands-on learning experiences.

This program of study has long offered work-based learning as an education tool through partnerships with the Habitat for Humanity organization. This practice allows students to work with other volunteers and perform community service. Working with this organization also allows for Construction Technology students to see and become involved in many different aspects of the industry – from blueprint reading to framing to interior finishing. A proposal for additional work-based learning is presented in the final section of this review, which will open additional opportunities for our students.

Organizational Structure

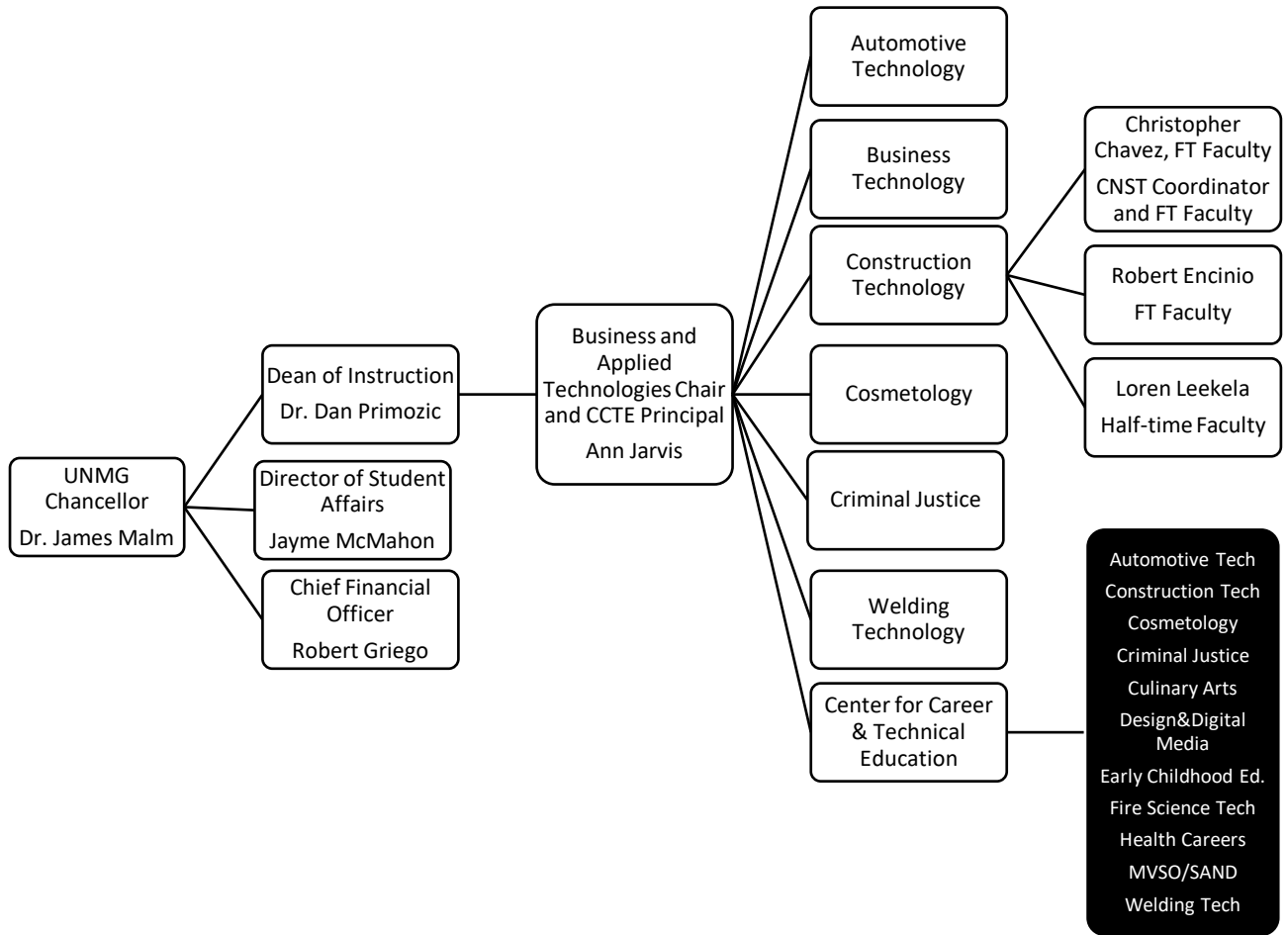
This program is part of academic affairs at the UNM Gallup Campus and falls under the Dean of Instruction's supervision. Currently, the Construction Technology program of study employs two-and-a-half instructors. Christopher Chavez and Robert Encinio are employed as full-time faculty members while Loren Leekela serves as a half-time instructor. This program of study is housed within the Business and Applied Technologies Division, with Ann Jarvis as its interim chairperson.

This graphic details the program of study's status within this division and the UNM Gallup Campus. The current interim chair serves in this capacity and as the principal of the Center for Career and Technical Education. The CTE is staffed by a program coordinator, Bobbi Campos, and has twelve programs of study: Automotive Technology, Construction Technology, Cosmetology, Criminal Justice, Culinary Arts, Design & Digital Media, Early Childhood Education, Fire Science Technology, Health Careers, Multi-Vocational Service Occupations, Students Achieving New Directions and Welding Technology.

The Business and Applied Technologies Division offers the following programs of study:

Program of Study	Certificate/Degree offered
Automotive Technology	<ul style="list-style-type: none">• Certificate in Automotive Technology• Associate of Applied Science in Automotive Technology
Business Administration	<ul style="list-style-type: none">• Associate of Arts in Business Administration
Construction Technology	<ul style="list-style-type: none">• Certificate in Construction Technology• Associate of Applied Science in Automotive Technology
Cosmetology	<ul style="list-style-type: none">• Certificate in Cosmetology/Barbering
Criminal Justice	<ul style="list-style-type: none">• Associate of Arts in Criminal Justice/Law Enforcement
Environmental Planning and Design	<ul style="list-style-type: none">• Associate of Arts in Environmental Planning and Design
General Studies	<ul style="list-style-type: none">• Associate of Applied Science in General Studies
Welding Technology	<ul style="list-style-type: none">• Certificate in Welding Technology• Associate of Applied Science in Welding Technology

Jacquelyn Vandever, Administrative Assistant II, provides clerical and administrative support to the chair and faculty members assigned to the Business and Applied Technologies Division.



Program Accreditation

The Construction Technology program of study is not accredited through any outside accrediting body. It utilizes materials provided through the National Center for Construction Education and Research, but has not sought accreditation through this body.

Previous Program Reviews

No records of previous program reviews for the Certificate in Construction Technology were located in the division's records. In the past several years, this division has seen four chairs and four administrative assistants; consequently, many of the materials have been moved to locations unknown or destroyed, leaving very little materials with which to work as baseline information.

Document One: Program Goals

The Construction Technology Program at the UNM Gallup Campus strives to impart knowledge and skills to its students to best prepare them for employment within the construction industry. The integration of theoretical knowledge and hands-on skills building and experiences guide students to the professions that fall within this discipline along with the educational and experiential requirements necessary to enter said careers. Occupational outlooks and potentials are shared with students so that they truly understand the need for highly-skilled, highly-educated and in-demand workers within the building industries. Students are also made aware of the potential for advancement through education and experience within the field, by faculty members as to the possibilities that exist through personal and professional experiences and expertise.

The mission of this program of study fall into place with the mission of UNM Gallup – *prepares people to achieve their educational and professional goals in a context of respect for the traditions and values of the many groups it serves*. Construction Technology challenges its students to complete the Certificate in this discipline within a realistic timeframe and emphasizes technical skills/job-specific skills necessary for students to obtain and maintain gainful employment. Faculty members incorporate computer and technology literacy into certificate classes in order to prepare students for what will be encountered in a job setting – equipment that is utilized by companies within the construction industry and computer-based safety training and certification. Service orientation is a part of the Certificate program, as the students are engaged in campus beautification and community service projects (Habitat for Humanity).

Workplace skills taught through Construction Technology tie into the vision and mission of the UNM Gallup Campus. Clear and concise communication is accentuated in order to learn to be part of a functioning team, or to become a leader of a team who is able to delegate and direct members in a comprehensible manner. Decision making is also modeled and demonstrated, tying directly into critical thinking and problem solving. Teamwork is imperative in the construction industry and is exhibited in all classes within this Certificate program; students learn to work together toward completion of a common goal. Planning, organizing and managing are key components to a team successfully working together and these aspects are all clearly and distinctly displayed by Construction Technology students and faculty in order to participate in and achieve project goals within work-based learning.

Students' personal skills are also addressed as they relate to the construction industry – integrity, work ethic, professionalism, responsibility, adaptability, and self-motivation all play key roles in student success and preparation for future employment endeavors. Not only are students undertaking the responsibility of completing a Certificate in Construction Technology, they are also being coached as to all facets of the construction industry and what personal qualities are necessary in order to successfully obtain and maintain employment and advancement within the industry.

The primary constituents and stakeholders in this program of study are its students, who range from recent high school graduates to adults returning to school to retool for a career change, to people who simply want to take a Construction Technology class for personal enrichment. This program has ties to the community because of its faculty members, who serve in several capacities in their communities – board members with Habitat for Humanity, representatives with the Zuni Pueblo, and SkillsUSA advisors. The faculty members are continuously looking for opportunities for their students to gain realistic experience with building projects in the greater Gallup community. Many of the students moving through this program of study have worked on Habitat for Humanity houses and campus beautification projects.

Document Two: Teaching and Learning – Curriculum

The curriculum for the Certificate in Construction Technology is as follows:

CNST 101	Layout and Framing	4 credit hours
CNST 104	NCCER Core	4 credit hours
CNST 106 or CNST 208	Cabinet Building or Furniture Construction	4 credit hours
CNST 109	Plumbing Theory	3 credit hours
CNST 115	Concrete Pouring & Finishing	4 credit hours
CNST 174	Design for Green Building	4 credit hours
CNST 175	Blueprint Reading	3 credit hours
CNST 295	Practicum	4 credit hours
		30 credit hours

This program of study is focused on introducing students to the many aspects of the construction industry and to instruct them in the hands-on skills necessary to be successful in this discipline. No general education courses are required within this Certificate plan. All of the courses listed within the Certificate in Construction Technology seamlessly articulate into the Associate of Applied Science Degree in Construction Technology. The AAS/Construction Technology degree plan requires students to complete fifteen credit hours of general education in four areas: Communication, Arts & Design (ARCH 1120/Introduction to Architecture), Humanities, and Social & Behavioral Sciences. Mathematics-related materials and instruction are incorporated into the Construction Technology curriculum and are addressed as related to this discipline and industry.

No pre-requisites for the above-listed courses exist, as these are introductory-level courses. Because this certificate program does not require any general education courses, there is no impact, positive or negative, upon other units. Also, no courses are cross-listed with others within or outside of the program of study. This certificate program of study was revised approximately two years ago to better suit the needs of its students. The program is introductory in nature and provides students with safety training and certification testing, which are requirements to many available employment positions within the construction and building industries.

Instructional delivery typically occurs in face-to-face class meetings that can include lectures, discussions, and presentations in addition to the application of hands-on skills. This program relies heavily on project-based learning in order for students to apply theoretical knowledge in realistic settings through a variety of learning styles. Instructors are cognizant of the varying learning styles of their students, and strive to address these styles through a variety of individual and small group/team assignments. All of the courses listed above, with the exception of CNST 104/NCCER Core, are best taught live. The NCCER Core class is offered and delivered in a hybrid and/or online modality.

Document Three: Teaching and Learning – Continuous Improvement

The Certificate in Construction Technology has an assessment plan that was developed and submitted in 2015; however, no reports for that plan could be located. Within this plan, the program goals listed are:

- Students demonstrate knowledge of entry-level skills for general building trades
- Students apply knowledge to solve practical problem on the work site
- Students meet the standards of approved accrediting entities (i.e., NCCER – National Center for Construction Education and Research).

The above-mentioned program goals are still relevant and applicable to the revised Certificate plan that was implemented approximately two years ago.

The student learning outcomes included on this plan are:

- A.1. Students will be able to demonstrate knowledge and practical application of safety skills
- A.2. Demonstrate knowledge of building trades – terms, materials, tools and methods
- B.1. Students will be able to apply computer skills – estimating or research for construction projects
- B.1. Demonstrate mastery of building skills of competency levels through simulated laboratory assignments, on-the-job live work projects, or other work assignments
- C.1. Demonstrate professionalism, ethics and quality work.

This assessment plan has not been revised since its submission in 2015; a new plan should be generated to meet the revisions within the Certificate/Construction Technology plan in order to measure *specific* skills and instructional competencies that are being delivered to students. The student learning outcomes can be rewritten with more definite timeframes, levels of skill/knowledge mastery, and the *application* of, rather than the *demonstration* of, particular skills and competencies necessary to be successful within this industry.

Per the 2015 Assessment Plan, the criteria for success for the student learning outcomes are:

Student Learning Outcome		Assessment Measure(s)	Assessment Method	Criteria for Success
A.1.	Students demonstrate cognitive knowledge and practical application of safety skills	<ul style="list-style-type: none"> • Written test • Hands-on demonstration of ability 	Direct	<ul style="list-style-type: none"> • 70% or higher on written test • Pass/Fail on lab demonstration
A.2.	Demonstrate knowledge of building trades – terms, materials, tools and methods	<ul style="list-style-type: none"> • Written test • Hands-on demonstration of ability 	Direct	<ul style="list-style-type: none"> • 70% or higher on written test

B.1.	Students will apply computer skills, computer aided drafting, estimating or research to construction projects	<ul style="list-style-type: none"> Observed lab demonstration 	Direct	<ul style="list-style-type: none"> Pass/Fail grade on assignment rubric sheet
B.2.	Demonstrate mastery of building skills or competency levels through simulated laboratory assignments, on-the-job live work projects or other work assignments	<ul style="list-style-type: none"> Observation 	Direct	<ul style="list-style-type: none"> Pass/Fail grade on assignment rubric sheet
C.1.	Demonstrate professionalism, ethics, and quality work	<ul style="list-style-type: none"> Observation 	Indirect	<ul style="list-style-type: none"> Obtain employment

Again, the plan needs to be revised in order to better define and measure student learning outcomes – specific skills and competencies should be identified and assessed. Behavioral objective terminology should be employed to measure students’ levels of knowledge, comprehension, application, analysis, synthesis, and evaluation under this program of study. “Pass/Fail” needs to be clearly defined so that students and others understand the levels of mastery per skill or competency being measured – rubrics are utilized and distributed to students per assignment or per skills/competencies being assessed. These should be couples with the individual course syllabi that are distributed to students.

This program of study needs to revise its assessment plan and consistently measure student learning outcomes in order to regularly and accurately assess the effectiveness of the program and to determine if it is meeting the needs of its students. Student Learning Outcomes, as previously stated, need to be rewritten to be more defined and precise in order to enhance the program’s ability to address the learning needs of students hoping to enter this employment sector.

Document Four: Students

Student recruitment occurs through very informal means – no set plan has been developed or implemented to target specific groups of individuals for enrollment. A solid audience that is ripe for recruiting are the secondary students who are dually enrolled within the Center for Career and Technical Education (CCTE). These students are introduced to this program of study while they are seniors in high school and are dually enrolled in eight credit hours per semester during their. These credit hours articulate into the Certificate in Construction Technology, giving the students a head start on their college careers.

Per the Carl D. Perkins Grant initiative, the entire UNM Gallup Campus needs to generate and implement a plan to attract and keep non-traditional students in its career and technical education programs of study. The most obvious group is females in typically male programs of study and/or occupations. As in many of the career and technical education programs of study – Automotive Technology, Construction Technology, Welding Technology – males outnumber females disproportionately. Recruitment for CCTE students does include information about females entering male-dominated disciplines and we attract a small number of females into Construction Technology. This recruitment includes providing information as to the opportunities for alternate occupations – project managers, designers, architects, engineers – that might not be obvious to students. All advertising for this program of study should depict females engaged in learning experiences offered at UNM Gallup.

Below is a chart indicating enrollment trends for the past nine semesters in this program of study:

Semester	Enrollment in CNST Certificate
S17	29
F17	28
S18	21
F18	06
S19	04
F19	23
S20	23
F20	06
S21	08

Enrollment figures indicated five semesters that are stable and consistent with four semester of extremely low enrollment. The program of study was revised in 2018, and, hopefully, figures will begin to show an uptick in student enrollment. The low enrollment for the last two semesters on the chart, Fall 2020 and Spring 2021, can easily be attributed to the affect that the pandemic has had on overall enrollment. Students have had difficulty with connectivity and accessibility, often time preventing them from enrolling in course work that was online rather than face-to-face. Class capacities had to be reduced to eight student in order to adhere to social distancing protocols set forth by the University and the New Mexico Department of Health.

Included is a listing of the graduates of the Certificate in Construction Technology program of study:

Semester	Number of CNST Certificate Graduates
S17	01
F17	00
S18	01
F18	01
S19	01
F19	02
S20	02
F20	03

Numbers are low for the enrollment in this certificate program. Again, an increase is expected beginning with more classes opening up to students for in-person instruction rather than online delivery. The revision of the curriculum to include only Construction Technology core courses should also attract more students who were not interested in nor successful in passing general education requirements that were part of the previous certificate plan. The revised certificate plan was instituted last year, and results should be showing in the next few semesters.

The rates of retention and persistence are as follows for this program of study:

Academic Period	Fall Headcount	Spring Returned	Average per Program of Study	Average of UNMG Degree-Seeking Return Rate	+/-
F13 – S14	33	20	60.61%	62.89%	-2.28%
F14 – S15	43	25	58.14%	67.09%	-8.95%
F15 – S16	45	26	57.78%	67.75%	-9.97%
F16 – S17	30	21	70.00%	66.89%	+3.11%
F17 – S18	25	14	56.00%	62.43%	-6.43%
F18 – S19	06	01	16.67%	64.75%	-48.08%
F19 – S20	21	17	80.95%	66.52%	+14.43%

Regarding student retention and persistence from a fall semester to the subsequent spring semester, the program results are literally all over the board. During several semesters, the student retention rate was just below the average for other degree-seeking UNMG student, while for two semesters, the retention rate of this program of study exceeded the campus average. The period from F18 to S19 showed an alarming percentage; however, because of the low number of entering or beginning students, this gave way to what indicates is a very low retention rate (1 out of 6 students). In the following semester, the rate bounced back to exceed the average.

Academic Period	Headcount	Fall Headcount	Average per Program of Study	Average of UNMG Degree-Seeking Return Rate	+/-
F13 – F14	32	2	6.06%	37.71%	-31.65%
F14 – F15	44	4	9.52%	40.60%	-40.08%
F15 – F16	45	4	8.89%	40.03%	-31.14%
F16 – F17	29	3	10.34%	40.93%	-30.59%
F17 – F18	24	1	4.17%	37.99%	-33.82%
F18 – F19	6	1	16.67%	46.53%	-29.86%
F19 – F20	21	2	9.52%	35.57%	-26.05%

Academic Period	Headcount	Fall Returned	Average per Program of Study	Average of UNMG Degree-Seeking Return Rate	+/-
F13 – S15	33	1	3.03%	27.06%	-24.03%
F14 – S16	42	1	2.38%	29.27%	-26.89%
F15 – S17	45	3	6.67%	29.56%	-22.89%
F16 – S18	29	0	0.00%	27.87%	-27.87%
F17 – S19	23	0	0.00%	25.92%	-25.92%
F18 – S20	06	0	0.00%	30.25%	-30.25%

It is very evident that the retention rates are dismal at best. The retention rates from fall to the next spring show the highest rate of persistence; however, as students should be moving through their program of study from fall-to-fall and three semesters of course work, the picture becomes bleaker. This may turn around since the Certificate in Construction Technology was revised and reduced to thirty credit hours of Construction Technology core courses only – no general education courses are included within this certificate plan. More information will be needed to determine if such a trend is occurring.

Student advisement occurs through Academic Advisement in Student Services. Informal advisement is provided by program faculty, but many of the students enrolled in this program of study are limited by financial aid as to what classes in which they can enroll. The recent revision of the certificate plan should enable more students to earn this milestone easier than in years past, as no general education requirements are included in it, and it seamlessly transitions into the Associate of Applied Science Degree in Construction Technology.

Several students from Construction Technology has participated in SkillsUSA, attending and competing at the NM SkillsUSA Leadership Conference and Skills Competition in several contests – Job Skill Demonstration A (demonstrate and describe a skill directly tied to the area of training), Extemporaneous Speaking (receive a topic and reference materials and prepare a speech in five minutes) and Carpentry (use materials and blueprints received to build a structure using a variety of skills associated with the trade). Information about the UNMG SkillsUSA Chapter is shared during recruitment presentations. This

is a national organization that offers networking opportunities for students to connect with potential employers, leadership training and development and connecting students to the work of work.

It is the hopes of the program that students earning a Certificate in Construction Technology carry over into the Associate of Applied Science Degree in this field. All of the credit hours earned through the certificate plan articulate into the degree plan, making it very easy for students to earn both achievements at the UNM Gallup Campus.

Per the New Mexico Career Pathways project, the following occupations are experiencing growth in the Northern Workforce Region, which encompasses McKinley, San Juan, Cibola, Rio Arriba, Colfax, Taos, Los Alamos, San Miguel and Santa Fe counties:

Occupation	Openings	Median Wage	Growth Number per	Growth Percentage
Construction Laborer	991	\$32,241	823	11%
First Line Supervisor	522	\$57,137	464	11%
Carpenter	503	\$39,075	349	8%
Roofer	167	\$32,906	160	12%
Plumbers Helper	72	\$33,288	70	16%

Most of the occupations listed above, with the exception of First Line Supervisor, are open to students completing the Certificate in Construction Technology program. Many student remain in contact with the faculty members; however, no formal follow-up survey exists to determine where students go after completing this program of study. Several students who have earned their Certificate and subsequent AAS Degree in Construction Technology have entered the BS in Construction Management program, while others have entered in the UNM School of Architecture and Planning. The Organization, Instruction and Learning Sciences (OILS) BS program is another option for students completing their AAS Degree in this field.

Document Five: Faculty

As of this writing, the Construction Technology program has two full-time faculty members, Christopher Chavez and Robert Encinio, and one half-time faculty member, Loren Leekela. Chris and Robert both teach full loads (1.00 FTE) – fifteen or sixteen credit hours per semester – and Loren teaches eight credit hours (0.50 FTE) per semester. Chris is a Lecturer II and serves as the coordinator the Construction Technology programs, for which he is paid a stipend. He teaches courses within the Certificate and AAS Degree programs. Robert, a Lecturer I, is assigned to teaching duties that include college classes and CTE classes, and he serves as a faculty advisor to SkillsUSA. Loren teaches courses for the Certificate and AAS Degree programs.

Professional development activities are offered to faculty members within Construction Technology via the Carl D. Perkins Grant, which supplements funding to career and technical education programs at the secondary and post-secondary levels. Within this grant application, a budget common to all career and technical education programs allows for the opportunity to include professional development activities and travel for CTE faculty. Funding is available for conference/workshop/training registration, online learning modules, certification examinations, and associated travel (mileage, per diem, airfare, lodging and ground transportation) to support professional development. In recent years, faculty from this program of study have attended the New Mexico Association for Career and Technical Education (NMACTE) Conference, the Associate for Career and Technical Education's CareerTech Vision (national conference), New Mexico SkillsUSA Leadership Conference and Skills Competition, SkillsUSA National Leadership Conference and Skills Competition (including Skills University sessions) and train-the-trainer sessions for the National Center for Construction Education and Research.

All of the above-mentioned activities have enhanced the ability of the instructors to offer better instructional delivery to students. They have also kept faculty members current and up-to-date with trends and issues within the building and construction industries. Attendance at and participation in these professional development activities allows the faculty members to network and generate contacts with peers, industry partners, and vendors associated with this discipline. At several of the conferences listed above, Construction Technology faculty attended sessions within the Architecture and Construction Career Cluster, which targeted issues specific to this area.

Document Six: Resources and Planning

This program of study relies on the University's operation budget in order to function. Approximately \$12,000 is allocated per year to purchase and support instructional materials. Faculty salaries and also covered within the University budget. Several of the classes have student fees attached in order to provide a "kit" to students that contains materials and supplies or testing fees specific to those classes. Construction Technology courses offered through the Center for Career and Technical Education (CCTE) has a budget separate from that of the University to provide supplies/materials and purchased services for these students. A portion of Robert Encinio's salary (50%) is paid through CCTE funds, also.

In years past, the Construction Technology program was included within the application for funding through Carl D. Perkins, which focuses on providing support for career and technical education programs of study; however, due to changes at the Federal level, this program was not earmarked for funding for the current application which runs from 2020-2022. Several pieces of equipment (>\$5000) have been purchased along with the supporting software and/or training. Other items such as hand and power tools have also been included on previous Perkins Grant applications, as these items needed to be replaced due to normal wear and tear.

This program does have an active advisory committee whose membership is comprised of representatives from the building industry, Habitat for Humanity, Gallup Solar, secondary school construction faculty, and associated faculty from UNMG. It has been recently suggested that due to a proposal to utilize funds from a previous project to bankroll another building initiative, that the advisory committee include representatives from the financial and fiscal realms to ensure that planning and budgeting occur in tandem with the project. The advisory committee's charge is to review the program and recommend changes in order to keep abreast of trends and issues within business and industry. This group has also provided valuable insight into the future of the construction industry on a local, regional and national scale.

Because the Construction Technology program falls under the Business and Applied Technologies Division, it relies on administrative and clerical support from a recently hired Administrative Assistant II, Jacquelyn Vandever. As stated earlier, this division, and thus the program of study, has been through several changes in leadership and support over the past several years. Realistically, it was without clerical support for most of 2019. The current AA II was hired and began work in March 2020, undergoing required trainings in order to carry out the duties and responsibilities of this position. When she began working, it was during the shutdown caused by the pandemic. She has established a routine of working with faculty from Construction Technology and is communication with them on a regular basis.

As of late, the Zollinger Library has provided technical support for the program's students needing to utilize University computers to participate in online instructional delivery. As it is well known, many of our students do not have access to computers or do not have connectivity to the internet, and many have taken advantage of the computer lab within the Zollinger Library in order to maintain attendance in online forums and complete/submit online assignments.

Document Seven: Facilities

The Construction Technology program is housed in a designated building for this discipline. The building houses two large spaces, each doubling as classroom and shop/lab space; the building also has two faculty office areas and restrooms. A locked storage yard is adjacent to the building, in which projects, trailers, and equipment is housed. Student parking is also adjacent to the building.

The building is woefully outdated for the size and scope of the program of study and the number of students enrolled. Ideally, a building for this program should have at minimum two classrooms, two shops/labs, offices, restrooms, equipment/tool storage, outdoor storage, student storage/lockers, and a computer lab. Currently, access to the internet is spotty and inconsistent, which hampers teaching and learning activities.

This program was slated to receive a portion of a new building (Center for Career and Technical Education and Innovation) on campus; however, legislative funding evaporated, and now this program, along with other career and technical education programs of study (Automotive Technology and Welding Technology) are eligible to share up to three million dollars for the purpose of renovating existing space. At this point in time, the Construction Technology Building has connectivity issues, water leaks, poorly placed parking spaces for those with mobility issues, and classroom/lab spaces that simply do not suffice for their intended uses, as they are used for both classroom and lab simultaneously. The program of study can offer two courses simultaneously, as lack of space prohibits anything beyond this.

It has been the practice of the University to assume that program faculty members maintain and repair tools and equipment. This is an outdated practice as many of the newer pieces of equipment cannot be repaired by someone other than a technician from the vendor/manufacturer. The Construction Technology program faculty should not be expected to maintain and repair their own building – that responsibility lies with the University.

The various classes within this program utilize campus spaces for building projects – pergolas and packed earth benches have been installed near the Construction Technology Building, as have ovens and grills. These items were built with dirt and rocks collected from the campus and were built by students for others to utilize.

Document Eight: Program Comparisons

Other institutions in our geographical area that offer certificate programs in Construction Technology include:

Institution	Location	Program Title
Central New Mexico Community College	Albuquerque, NM	<ul style="list-style-type: none"> • Certificate of Completion in Architectural Woodworking • Certificate of Completion in Residential Carpentry
Coconino Community College	Flagstaff, AZ	<ul style="list-style-type: none"> • Construction Technology Certificate
Navajo Technical University	Crownpoint, NM	<ul style="list-style-type: none"> • Certificate in Construction Technology • Certificate in Electrical Trades • Certificate in Plumbing
NMSU Carlsbad	Carlsbad, NM	<ul style="list-style-type: none"> • Certificate in Building Trades
Northland Pioneer College	Holbrook, AZ	<ul style="list-style-type: none"> • Certificate of Proficiency in Construction Technology • Certificate of Proficiency in Masonry
Luna Community College	Las Vegas, NM	<ul style="list-style-type: none"> • Certificate in Building Technology
San Juan College	Farmington, NM	<ul style="list-style-type: none"> • Certificate in Finish Carpentry • Framing Certificate • Insulation and Drywall Certificate
Santa Fe Community College	Santa Fe, NM	<ul style="list-style-type: none"> • Building Science and construction Technologies Adobe Certificate
UNM Taos	Taos, NM	<ul style="list-style-type: none"> • Certificate in Construction Technology
Western New Mexico University	Silver City, NM	<ul style="list-style-type: none"> • Certificate in Construction Technology • Certificate in Electrical Technology

The program offered through UNM Gallup is similar in nature to those offered at Coconino Community College, Luna Community College and UNM Taos. Many of the other certificates of completion or proficiency have much fewer credit hours and focus on specific aspects so specialty areas (i.e., adobe, masonry, insulation). The program of study at UNM Gallup provides students with a solid knowledge and skills base that can lead to future employment or educational opportunities. This program is also responsive to the area needs (see “Future Direction” section) for affordable housing. It is also addresses cultural awareness and green building initiatives by demonstrating and teaching alternative methods and techniques of building construction that could be easily implemented in our geographical area.

Document Nine: Future Direction

It is the hope of the Construction Technology program of study to become more engaged in work-based learning within the greater Gallup community. Several years ago, Sunwest Bank (now Pinnacle Bank) donated a house to this program. The house was utilized as a live learning tool for Construction Technology students from the Center for Career and Technical Education through those seeking an Associate of Applied Science Degree in this discipline. Many hands and manpower hours were put into repairing, renovating, and restoring this home. The project took several years to complete, as this was the initial type of project of its kind. After the dust literally settled, the home, which was also zoned for a business, was sold and the profit was to have been rolled over into another similar project. That has yet to occur.

Christopher Chavez, coordinator for this program of study, is proposing to use those funds to purchase another house to repair, renovate, and restore utilizing green and alternative building techniques. The finished project would be sold, and the money recycled into another similar project. This type of project would afford the students and faculty the ability to gain valuable hands-on learning experiences that cannot be replicated in a shop or lab setting. Students gain and grasp authentic, realistic and meaningful insights as to how an actual construction/building site operates. The students would work as crews, much as is done on a “real” construction site. Students could move through the certificate and/or Associate of Applied Science Degree program plan, applying theories and skills that have been taught in the classroom setting. All courses within the Construction Technology Certificate/Degree plan would have ties to this type of a project, from basic layout and framing (CNST 101/Layout and Framing) to alternative practices (SUST 250/Home Energy Audits).

This proposal would create a pathway for our students to perceive what various occupations are within the Career Cluster of Architecture and Construction. Within this Career Cluster, three pathways exist – Design/Pre-Construction, Construction, and Maintenance/Operations. All pathways would be employed in this project and would, again, immerse and engage students in live, active construction site. Chris is proposing that once up and running, the projects would fund themselves, providing cost savings to the University.

Part of the focus of career and technical education is to engage students in work-based learning rather than segregating them in a classroom/shop environment. This proposal would allow students to gain hands-on, work-based learning, and it would also engage them in their community. The Construction Technology students are involved in providing their services and manpower to Habitat for Humanity, whose building projects have been utilized as practicum sites for UNM Gallup students. Our students would be able to network with local business and industry leaders, who will be their potential employers, on a larger scale should this proposal be approved and implemented.