



**STATE OF NEW MEXICO
PUBLIC EDUCATION DEPARTMENT
300 DON GASPAR
SANTA FE, NEW MEXICO 87501-2786
Telephone (505) 827-5800
<http://www.ped.state.nm.us>**

CHRISTOPHER N. RUSZKOWSKI
SECRETARY OF EDUCATION

SUSANA MARTINEZ
GOVERNOR

Dear Career Planner,

The College and Career Readiness Bureau is pleased to present the second edition of the New Mexico Career Clusters Guide. This guide is designed to be a tool for students, parents, counselors, faculty, and career changers. It targets the career pathways needed to meet educational and employment goals and provides important information about wages and educational options in New Mexico. We were delighted by the utilization of the 2016 edition, and look forward to expanding the number of New Mexicans who have access to this important resource.

This guide, designed around career clusters and related pathways, portrays a common set of knowledge and skills required for career success in each path. This process enhances the traditional approach to career and technical education by providing a foundation that prepares individuals for a full range of occupations and career specialties. This method uses a blend of employability knowledge, technical, and academic skills.

The 2018 edition introduces an important new element, Recommended Programs of Study. As we look forward to a new era for career technical education, New Mexico is now emphasizing those high school programs that best prepare a student for high skill, high demand, and/or high wage careers.

The New Mexico Public Education Department is committed to supporting the state's workforce system. This guide will assist students in identifying the available career options by using individual interests, clearly defined pathways, and timely employment projections.

Students using this guide will be able to make career decisions that meet their needs and allow them to thrive as members of New Mexico's current and emerging economy.

Sincerely,

A handwritten signature in blue ink that reads "Elaine Perea".

Elaine Perea, PhD
Director,
College and Career Readiness Bureau

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How to Use This Guide for Career Planning

Are you planning for high school, college, the workforce, or a career change? You will find the New Mexico Career Clusters Guide a valuable resource as you make these important decisions. This guide is designed to be a tool for planning and preparing for a career. It provides you a structure for selecting careers based on linking what you know about yourself with information about occupations and typical training requirements.

The career planning process is the cycle you follow when seeking employment in occupations that match your interests. You can repeat this process as needed to help you find your place in the world of work. Follow these steps to learn about Career Clusters, their multiple pathways, and to find career options that best fit you.

#1 Know Yourself

The Interest Profiler on pages 5-7 gives you one option for finding career clusters and occupations that match your personal characteristics, strengths, and preferred activities. Results do not tell you which occupation or cluster you should choose, but they do provide information for determining the kinds of work you might want to explore.

#2 Explore Career Clusters

Career Clusters help you sort through more than 900 careers. Each cluster contains occupations that have similar knowledge and skills. Career Pathways within each cluster help identify useful training to prepare for work in specific jobs. Connect your Interest Profiler results with clusters and occupations on pages 12-13 to discover which ones most closely match your work-related interests.

#3 Know Your Options

Use your Step 2 information to choose one Career Cluster from the section starting on page 14. First, get the cluster's "big picture" and find online career resources. Then learn about the cluster, its pathways, and related occupations. Review the Selected Careers table's job descriptions, and related occupations, salary data, and interests. Find out about successful people who work in the cluster. Repeat this process with other clusters that interest you.

#4 Experience Real Jobs

You may want to learn what it's really like to work in a specific occupation. Check out page 144 to find ways you can get experience in and gain a deeper understanding of occupations you might like.

Discover Where Your Interests And Career Clusters Intersect

The Interest Profiler¹ is a self-assessment tool designed to help you identify what your interests are and translate these interests into occupations that best fit you. The following two pages include a list of 60 questions about work activities that some people perform in their jobs. By answering questions that represent important Interest Areas, the results from the Interest Profiler will help you discover your strong work-related interests and match them to careers.

Instructions for taking Interest Profiler:

- Read the work activities from top to bottom and answer in the correct order.
- Read each question carefully and decide how you would feel about doing each type of work. Try not to think about whether you have enough education or training to do the work, or how much money you would make doing the work. Just think about whether you would like or dislike performing the work activity.
- If you think you would like the work activity, mark the “Like” box.
- If you think you would dislike the work activity, mark the “Dislike” box.
- If you are unsure whether you would like the work activity, mark the “Unsure” box.



Other ways to explore your own characteristics:

Interests are only one part of who you are, so check out the following sites to find other ways to explore your own characteristics and identify other qualities that connect with careers that you may choose.

Interests

Career Key
careerkey.org

Campbell Interest & Skill Survey
careertestingreviews.com/ciss.htm

Self-Directed Search
self-directed-search.com

Personality Type

Myers-Briggs Type Indicator
cpp.com/products/mbti/index.aspx

Abilities & Aptitudes

SAT
sat.collegeboard.org/about-tests

ACT
act.org/products/k-12-act-test

ASVAB
official-asvab.com

WorkKeys®
act.org/certificate/index.html

¹ The Interest Profiler is adapted from the O*NET® Interest Profiler Short Form, a shorter web-based version of the O*NET Interest Profiler. Both interest assessment instruments are part of the Career Exploration Tools owned by the U.S. Department of Labor, Employment Training Administration (DOL/ETA). The O*NET Interest Profiler Short Form was developed to aid in career exploration settings where it is beneficial for interest assessments to be completed and discussed in a short amount of time (e.g., career counseling and consultation settings). For more information about the web-based O*NET Interest Profiler Short Form, please check out onetcenter.org/IPSF.html?p=3 or visit MY NEXT MOVE mynextmove.org/explore/ip to take the web-based assessment. Information about the O*NET Interest Profiler can also be found at onetcenter.org/IP.html. All O*NET Assessment/Counseling Tools are copyrighted. O*NET is a trademark of DOL/ETA.

Interest Profiler

Please follow instructions on page 5 to take the interest assessment.

Work Activity	Like	Dislike	Unsure
Build kitchen cabinets			
Lay brick or tile			
Develop a new medicine			
Study ways to reduce water pollution			
Write books or plays			
Play a musical instrument			
Teach an individual an exercise routine			
Help people with personal or emotional problems			
Buy and sell stocks and bonds			
Manage a retail store			
Develop a spreadsheet using computer software			
Proofread records or forms			
Repair household appliances			
Raise fish in a fish hatchery			
Conduct chemical experiments			
Study the movement of planets			
Compose or arrange music			
Draw pictures			
Give career guidance to people			
Perform rehabilitation therapy			
Operate a beauty salon or barber shop			
Manage a department within a large company			
Load computer software into a large computer network			
Operate a calculator			
Assemble electronic parts			
Drive a truck to deliver packages to offices and homes			
Examine blood samples using a microscope			
Investigate the cause of a fire			
Create special effects for movies			
Paint sets for plays			

Record total number of likes for each color/pattern in boxes below:

--	--	--	--	--	--

Work Activity	Like	Dislike	Unsure
Do volunteer work at a non-profit organization			
Teach children how to play sports			
Start your own business			
Negotiate business contracts			
Keep shipping and receiving records			
Calculate the wages of employees			
Test the quality of parts before shipment			
Repair and install locks			
Develop a way to better predict the weather			
Work in a biology lab			
Write scripts for movies or television shows			
Perform jazz or tap dance			
Teach sign language to people with hearing disabilities			
Help conduct a group therapy session			
Represent a client in a lawsuit			
Market a new line of clothing			
Inventory supplies using a hand-held computer			
Record rent payments			
Set up and operate machines to make products			
Put out forest fires			
Invent a replacement for sugar			
Do laboratory tests to identify diseases			
Sing in a band			
Edit movies			
Take care of children at a day-care center			
Teach a high-school class			
Sell merchandise at a department store			
Manage a clothing store			
Keep inventory records			
Stamp, sort, and distribute mail for an organization			

Record total number of likes for each color/pattern in boxes below:

Scoring Instructions¹

Work activity items are color/pattern coded to help you score and interpret results. There are six color/pattern bands of items to represent six Interest Areas. Items in the same color/pattern band represent a particular Interest Area. To reveal your Interest Areas, follow these instructions:

Color/ Pattern	Interest Area
Green	Realistic
Pink	Investigative
Yellow	Artistic
Purple	Social
Orange	Entreprising
Blue	Conventional

Step 1: Count the number of “Likes” you marked for the questions in green band on page 6, then record the number in the first green box at the bottom of page 6.

Step 2: Count the number of “Likes” you marked for the questions in the green band on page 7, then record the number in the green box at the bottom of page 7.

Step 3: Add the numbers in the two green boxes on pages 6 and 7 and write the total in the "R" green box below. This total equals your score for the Realistic Interest Area.

Step 4: Repeat steps 1, 2, and 3 for the pink, yellow, purple, orange, and blue questions.



Primary Interest Area:

Which Interest Area has your highest score: R, I, A, S, E, or C? Enter the letter below.

Your Primary Interest Area: _____

Secondary Interest Areas:

Which Interest Areas have your second and third highest score? Enter the letters below:

Your Secondary Interest Areas: _____ & _____

What Your Primary Interest Area Means

What occupations are linked with your interests? You will want to explore occupations that are related to your Primary Interest Area. For example, a person with strong Realistic interests would probably be most satisfied with strong Realistic occupations (e.g., electrician, firefighter, surgeon). It is important to note that an individual's interests may not be described by just one of the six interest categories. In fact, John Holland suggests that most people will have interests in several of the areas, but that they probably will have one Interest Area that is stronger than the others. If you have two identical highest scores, you should consider both scores as it indicates that you have two Primary interests. If you are not certain about the occupations linked to your Primary Interest Area, you can use your Secondary Interest Areas to explore a different set of careers.

Read over the definitions of your Primary and Secondary Interest Areas on the following page to get a better understanding of your work-related interests.

¹The O*NET Interest Profiler Short Form is a self-scored interest assessment. For information about scoring the paper-and-pencil version of the O*NET Interest Profiler Short Form, please check out O*NET® Interest Profiler Short Form Psychometric Characteristics: Summary 2010 (onetcntr.org/dl_files/IPSF_Psychometric.pdf).

The Interest Profiler measures interests in each of the six Holland RIASEC types.² This section provides definitions for each of the six types. Each definition includes examples of activities that individuals with that interest type like to perform, as well as examples of famous people whose field of work matches the interest type.

Realistic – The “Doers”

People with Realistic interests like work activities that include practical, hands-on problems and solutions. They enjoy dealing with plants, animals, and real-world materials like wood, tools, and machinery. They often enjoy outside work. Often people with Realistic interests do not like occupations that mainly involve doing paperwork or working closely with others. Famous realists: NASCAR driver Danica Patrick, TV carpenter Norm Abram, wildlife expert Steve Irwin, and multi-talented athlete Jim Thorpe.

Investigative – The “Thinkers”

People with Investigative interests like work activities that have to do with ideas and thinking more than with physical activity. They prefer to search for facts and figure out problems mentally rather than to persuade or lead people. Prominent investigators: astrophysicist Neil deGrasse Tyson, primatologist Jane Goodall, mathematician/computer scientist Grace Murray Hopper, and neuroscientist Ben Carson.

Artistic – The “Creators”

People with Artistic interests like work activities that deal with the artistic side of things, such as forms, designs, and patterns. They like self-expression in their work. They prefer settings where work can be done without following a clear set of rules. Well-known artists: painter/sculptor Leonardo da Vinci, actress Halle Berry, writer J.K. Rowling, and singers Lady Gaga and Tony Bennett.

Social – The “Helpers”

People with Social interests like work activities that assist others and promote learning and personal development. They prefer to communicate more than to work with objects, machines, or data. They like to teach, give advice, help, or otherwise be of service to people. Famous helpers: educator Booker T. Washington, mental health care reformer Dorothea Dix, TV psychologist Phil McGraw, and civil rights leader Martin Luther King Jr.

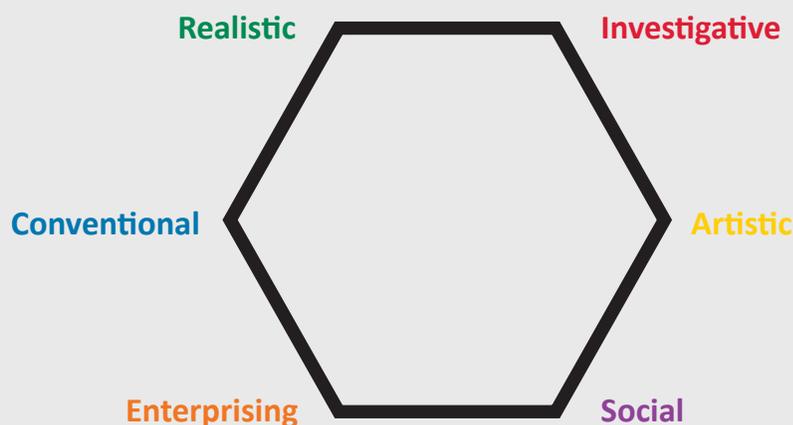
Enterprising – The “Persuaders”

People with Enterprising interests like work activities that have to do with starting up and carrying out projects, especially business ventures. They like persuading and leading people and making decisions. They enjoy taking risks for profit. These people prefer action rather than thought. Prominent persuaders: TV mogul Oprah Winfrey, business magnate Donald Trump, U.S. Senator Marco Rubio, and Facebook co-founder Mark Zuckerberg.

Conventional – The “Organizers”

People with Conventional interests follow procedures and maintain accurate written and numerical business records. They prefer working in structured settings where roles and tasks are clearly defined. Well-known organizers: businessman J.C. Penney, Supreme Court Justice Sandra Day O’Connor, and professional organizer Alejandra Costello.

John Holland suggested that viewing the Interest Areas on a hexagon can help people understand how their interests overlap or how they may be distinctly different. Interests that are most similar touch each other on the hexagon (e.g., Social, Enterprising, and Conventional). On the other hand, interests across the hexagon from each other (e.g., Conventional and Artistic) are least likely to have similarities. Sometimes people’s combined interests are opposite from or not adjacent to each other. In this case, people sometimes choose to focus on the most different interest as a hobby or to find a unique work setting that merges their interests.



² The O*NET Interest Profiler is compatible with Holland’s (1985a) Theory of Vocational Personality, one of the most widely accepted approaches to vocational choice. Information for Interest Areas is extracted from the O*NET Career Exploration Tools owned by the U.S. Department of Labor, Employment Training Administration (DOL/ETA). All O*NET Assessment/Counseling Tools are copyrighted. O*NET is a trademark of DOL/ETA.

16 Career Clusters and Their Career Pathways

Career clusters are groups of occupations that require a common knowledge base and the use of similar skills. Each cluster contains several smaller groups called career pathways that connect to educational programs, industries, and careers. While a career cluster paints a broad picture of a group of occupations, a pathway helps you focus on and develop a clear, more informed educational plan over time.

This Career Clusters Guide is designed around the O*NET® OnLine 16 Career Clusters and 77 related Career Pathways, which provide in-depth information about occupations in the same field of work that requires similar skills. The National Career Clusters Framework also organizes educational delivery within 16 Career Clusters and 79 Career Pathways to support career awareness and exploration. Please check out www.careertech.org/crosswalks for links between the O*NET Career Clusters and National Career Clusters.

Career Cluster	Description	Career Pathway
 Agriculture, Food & Natural Resources	Do you enjoy working with plants and animals? Interested in working to conserve natural resources or protect the environment? This cluster includes careers in the planning, production, processing, management, distribution, and marketing of agricultural products, including food, plants, animals, fabrics, wood, and crops.	<ul style="list-style-type: none"> • Agribusiness Systems • Animal Systems • Environmental Service Systems • Food Products & Processing Systems • Natural Resources Systems • Plant Systems • Power, Structural & Technical Systems
 Architecture & Construction	Do you want to design, build, and maintain structures where people live, work, and play? This cluster includes careers in designing, planning, managing, building, and maintaining the built environment.	<ul style="list-style-type: none"> • Construction • Design/Pre-Construction • Maintenance/Operations
 Arts, Audio/Video Technology & Communications	Do you like to perform? Do you love to use your artistic creativity on the job? This cluster includes careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content, including visual and performing arts and design, journalism, and entertainment services.	<ul style="list-style-type: none"> • Audio & Video Technology & Film • Journalism & Broadcasting • Performing Arts • Printing Technology • Telecommunications • Visual Arts
 Business, Management & Administration	Are you entrepreneurial? Do you like to plan and organize activities? This cluster includes careers in planning, organizing, directing, and evaluating business functions essential to effective business operations.	<ul style="list-style-type: none"> • Administrative & Information Support • Business Analysis • Business Financial Management & Accounting • Human Resources • Management • Marketing
 Education & Training	Do you enjoy teaching others? Are you comfortable with public speaking? This cluster includes careers in planning, managing, and providing education and training services and related learning support services, including administration and library services.	<ul style="list-style-type: none"> • Administration & Administrative Support • Professional Support Services • Teaching/Training
 Finance	Do you like to work with numbers? Do you want to help people plan for their financial futures? This cluster includes careers in financial and investment planning, banking, insurance, and business financial management.	<ul style="list-style-type: none"> • Banking & Related Services • Business Financial Management • Financial & Investment Planning • Insurance Services
 Government & Public Administration	Are you interested in government and politics? Would you like to help pass law? This cluster includes careers in planning, managing, and providing government services at the federal, state, and local levels; including legislative, administrative, and regulatory services.	<ul style="list-style-type: none"> • Governance • National Security • Planning • Public Management & Administration • Regulation • Revenue & Taxation

Career Cluster	Description	Career Pathway
 Health Science	Do you enjoy helping people feel better? Would you like working in a hospital or other medical facility? This cluster includes careers in planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnological research and development.	<ul style="list-style-type: none"> • Biotechnology Research & Development • Diagnostic Services • Health Informatics • Support Services • Therapeutic Services
 Hospitality & Tourism	Do you want to help other people enjoy their leisure time? Would you like to work in a hotel or in a restaurant? This cluster includes careers in the management, marketing, and operations of restaurants and other food services, lodging, attractions, recreation events, and travel-related services.	<ul style="list-style-type: none"> • Lodging • Recreation, Amusements & Attractions • Restaurants & Food/Beverage Services • Travel & Tourism
 Human Services	Do you like to help people? Would you enjoy teaching people how to improve their lives? This cluster includes careers that involve tending to families and to human needs.	<ul style="list-style-type: none"> • Consumer Services • Counseling & Mental Health Services • Early Childhood Development & Services • Family & Community Services • Personal Care Services
 Information Technology	Do you like technology? Do you enjoy working with computer hardware, software, multimedia, or network systems? This cluster includes careers related to the design, development, support, and management of hardware, software, Internet, multimedia, and systems integration services.	<ul style="list-style-type: none"> • Information Support & Services • Interactive Media • Network Systems • Programming & Software Development
 Law, Public Safety, Corrections & Security	Do you like to help protect other people's safety? Do you want to help enforce the law? This cluster includes careers in planning, managing, and providing legal, public safety, corrections, protective services, and homeland security, including professional and technical support.	<ul style="list-style-type: none"> • Correction Services • Emergency & Fire Management Services • Law Enforcement Services • Legal Services • Security & Protective Services
 Manufacturing	Do you like to design and make things? Are you comfortable working with machines? This cluster includes careers in planning, managing, and performing the processing of materials into intermediate or final products and related professional and technical support activities, such as production planning and control, maintenance, and manufacturing/process engineering.	<ul style="list-style-type: none"> • Maintenance, Installation & Repair • Manufacturing Production Process Development • Production • Quality Assurance
 Marketing, Sales & Service	Do you like to sell products or services? Are you friendly and outgoing? This cluster includes careers in planning, managing, and performing marketing activities to reach organizational objectives.	<ul style="list-style-type: none"> • Buying & Merchandising • E-Marketing • Management & Entrepreneurship • Marketing Communications & Promotion • Marketing Information Management & Research • Professional Sales & Marketing
 Science, Technology, Engineering & Mathematics	Do you like science or math? Do you enjoy solving problems? This cluster includes occupations and careers in planning, managing, and providing scientific research and professional and technical services (e.g., physical science, social science, engineering), including laboratory and testing services, and research and development services.	<ul style="list-style-type: none"> • Engineering & Technology • Science & Math
 Transportation, Distribution & Logistics	Would you like to fly planes, drive trucks, or pilot ships? Would you enjoy planning roads or power systems? This cluster includes careers in planning, management, and movement of people, materials, and goods by road, pipeline, air, rail, and water as well as related professional and technical-support services, such as transportation-infrastructure planning and management, logistics services, mobile equipment, and facility maintenance.	<ul style="list-style-type: none"> • Facility & Mobile Equipment Maintenance • Health, Safety & Environmental Management • Logistics Planning & Management Services • Sales & Service • Transportation Operations • Transportation Systems/Infrastructure Planning, Management & Regulation • Warehousing & Distribution Center Operations

Source: O*NET OnLine onetonline.org/find/career

Introduction to Career Clusters Matrix

Now that you've finished the Interest Profiler, circle the column headings on these two pages that match the Primary and Secondary interests that you discovered on page 8. Then look at the occupations listed under your types and mark any that appeal to you. Broaden your options by looking across both pages at other occupations in the career clusters containing the jobs you've marked. Remember: the occupations in this matrix give you only a few examples. To find additional careers, explore the career clusters information that follows.

Examples of Occupations by Interest Type and Cluster

	Realistic	Investigative	Artistic
Agriculture, Food & Natural Resources	<ul style="list-style-type: none"> Pest Control Workers Logging Equipment Operators Hazardous Materials Removal Workers 	<ul style="list-style-type: none"> Zoologists & Wildlife Biologists Animal Scientists Environmental Scientists & Specialists 	<ul style="list-style-type: none"> Floral Designers Park Naturalists
Architecture & Construction	<ul style="list-style-type: none"> Construction Laborers Roofers Sheet Metal Workers 	<ul style="list-style-type: none"> Operations Research Analysts Civil Engineers 	<ul style="list-style-type: none"> Interior Designers Architects
Arts, A/V Technology & Communications	<ul style="list-style-type: none"> Telecommunications Line Installers Motion Picture Camera Operators Fine Artists 	<ul style="list-style-type: none"> Telecommunications Equipment Repairers Film & Video Editors 	<ul style="list-style-type: none"> Art Directors Multimedia Artists & Animators Photographers
Business, Management & Administration	<ul style="list-style-type: none"> Couriers & Messengers Library Assistants, Clerical Office Machine Operators 	<ul style="list-style-type: none"> Survey Researchers Market Research Analysts Statisticians 	<ul style="list-style-type: none"> Advertising & Promotions Managers Public Relations Specialists
Education & Training	<ul style="list-style-type: none"> Vocational Education Teachers Multimedia Collections Specialists 	<ul style="list-style-type: none"> School Psychologists Health Specialties Teachers 	<ul style="list-style-type: none"> Interpreters & Translators Preschool Teachers, Except Special Education
Finance	<ul style="list-style-type: none"> Auto Insurance Appraisers Title Examiners 	<ul style="list-style-type: none"> Fraud Examiners Risk Management Specialists 	<ul style="list-style-type: none"> Content Editors
Government & Public Administration	<ul style="list-style-type: none"> Coroners Surveying Technicians 	<ul style="list-style-type: none"> Climate Change Analysts Economists 	<ul style="list-style-type: none"> Political Scientists Communications Professors
Health Science	<ul style="list-style-type: none"> Radiologic Technologists Home Health Aides Surgical Technologists 	<ul style="list-style-type: none"> Pediatricians, General Podiatrists Pharmacists 	<ul style="list-style-type: none"> Recreational Therapists Psychiatrists Speech-Language Pathologists
Hospitality & Tourism	<ul style="list-style-type: none"> Dishwashers Bakers Maids & Housekeeping Cleaners 	<ul style="list-style-type: none"> Blenders/Cooks Brewers Cheese Makers 	<ul style="list-style-type: none"> Cooks Set & Exhibit Designers Recreation Workers
Human Services	<ul style="list-style-type: none"> Personal Care Aides Seamstresses Shampooers 	<ul style="list-style-type: none"> Healthcare Social Workers Marriage & Family Therapists 	<ul style="list-style-type: none"> Cosmetologists Childcare Workers Tailors
Information Technology	<ul style="list-style-type: none"> Telecommunications Engineering Specialists Software Quality Assurance Engineers 	<ul style="list-style-type: none"> Computer Hardware Engineers Data Warehousing Specialists Information Security Analysts 	<ul style="list-style-type: none"> Video Game Designers Graphic Designers
Law, Public Safety, Corrections & Security	<ul style="list-style-type: none"> Parking Enforcement Workers Bailiffs Lifeguards & Ski Patrol Workers 	<ul style="list-style-type: none"> Forensic Science Technicians Security Management Specialists 	<ul style="list-style-type: none"> Psychology Professors Forensic Artists
Manufacturing	<ul style="list-style-type: none"> Aircraft Structure & Systems Assemblers Computer-Controlled Machine Tool Operators Engine & Other Machine Assemblers 	<ul style="list-style-type: none"> Power Distributors & Dispatchers Medical Equipment Repairers Tool & Die Makers 	<ul style="list-style-type: none"> Stone Cutters & Carvers Glass Blowers Potters
Marketing, Sales & Service	<ul style="list-style-type: none"> Real Estate Appraisers Demonstrators & Product Promoters 	<ul style="list-style-type: none"> Search Marketing Strategists Sales Engineers 	<ul style="list-style-type: none"> Models Merchandise Displayers Marketers
Science, Technology, Engineering & Mathematics	<ul style="list-style-type: none"> Mechanical Engineers Chemical Engineers Electrical Engineers 	<ul style="list-style-type: none"> Microbiologists Materials Scientists Chemists 	<ul style="list-style-type: none"> Mathematicians Marine Architects Architectural Drafters
Transportation, Distribution & Logistics	<ul style="list-style-type: none"> Automotive Body Repairers Motorcycle Mechanics Automotive Glass Installers 	<ul style="list-style-type: none"> Traffic Technicians Avionics Technicians 	<ul style="list-style-type: none"> Gem & Diamond Workers Precious Metal Workers



Social	Enterprising	Conventional
<ul style="list-style-type: none"> Agricultural Sciences Professors Veterinary Assistants 	<ul style="list-style-type: none"> Nature Sciences Managers Farm Product Buyers & Purchasing Agents 	<ul style="list-style-type: none"> Environmental Engineering Technicians Farm Equipment Mechanics Food Scientists & Technologists
<ul style="list-style-type: none"> Architecture Professors Engineering Professors 	<ul style="list-style-type: none"> Construction Managers Cost Estimators 	<ul style="list-style-type: none"> Civil Drafters Drywall Installers
<ul style="list-style-type: none"> Broadcast News Analysts Choreographers DJs (Disc Jockeys) 	<ul style="list-style-type: none"> Agents & Business Managers of Artists, Performers & Athletes Craft Artists Commercial & Industrial Designers 	<ul style="list-style-type: none"> Broadcast Technicians Technical Writers
<ul style="list-style-type: none"> Training & Development Specialists Human Resources Specialists 	<ul style="list-style-type: none"> Industrial Production Managers Sales Managers Advertising Sales Agents 	<ul style="list-style-type: none"> Auditors Budget Analysts Tax Preparers
<ul style="list-style-type: none"> Special Education Teachers Fitness Trainers & Aerobics Instructors Dietitians & Nutritionists 	<ul style="list-style-type: none"> Education Administrators, Preschool & Childcare Center/Program Coaches & Scouts Secondary School Teachers 	<ul style="list-style-type: none"> Librarians Teacher Assistants Education Administrators
<ul style="list-style-type: none"> Insurance Sales Agents Loan Counselors 	<ul style="list-style-type: none"> Real Estate Sales Agents Personal Financial Advisors 	<ul style="list-style-type: none"> Bill & Account Collectors Loan Officers Tellers
<ul style="list-style-type: none"> Emergency Management Directors Eligibility Interviewers 	<ul style="list-style-type: none"> Equal Opportunity Representatives & Officers Social & Community Service Managers Storage & Distribution Managers 	<ul style="list-style-type: none"> City & Regional Planning Aides Mapping Technicians Assessors
<ul style="list-style-type: none"> Occupational Therapy Aides Psychiatric Aides Nursing Assistants 	<ul style="list-style-type: none"> Opticians, Dispensing Psychiatric Technicians Medical & Health Services Managers 	<ul style="list-style-type: none"> Health Information Technicians Pharmacy Technicians Medical Transcriptionists
<ul style="list-style-type: none"> Tour Guides & Escorts Waiters & Waitresses Concierges 	<ul style="list-style-type: none"> Restaurant Hosts & Hostesses Umpires & Referees Bartenders 	<ul style="list-style-type: none"> Hotel Desk Clerks Food Preparation Workers Fast Food Cooks
<ul style="list-style-type: none"> Clergy Rehabilitation Counselors 	<ul style="list-style-type: none"> Skincare Specialists Manicurists & Pedicurists 	<ul style="list-style-type: none"> Barbers Religious Activity Directors
<ul style="list-style-type: none"> Informatics Nurse Specialists Computer Science Professors 	<ul style="list-style-type: none"> Computer Network Support Specialists Database Architects 	<ul style="list-style-type: none"> Computer Network Architects Network & Computer Systems Administrators
<ul style="list-style-type: none"> Sheriffs & Deputy Sheriffs Animal Control Workers Law Professors 	<ul style="list-style-type: none"> Lawyers Private Detectives & Investigators 	<ul style="list-style-type: none"> Paralegals & Legal Assistants Security Guards
<ul style="list-style-type: none"> Farm & Home Management Advisors Medical Appliance Technicians 	<ul style="list-style-type: none"> Team Assemblers Production Managers Supervisors of Mechanics, Installers & Repairers 	<ul style="list-style-type: none"> Purchasing Agents Fiberglass Fabricators Machinists
<ul style="list-style-type: none"> Customer Service Representatives Meeting, Convention & Event Planners Travel Guides 	<ul style="list-style-type: none"> Real Estate Brokers Wholesale & Retail Buyers 	<ul style="list-style-type: none"> Stock Clerks Online Merchants
<ul style="list-style-type: none"> Epidemiologists Sociologists 	<ul style="list-style-type: none"> Industrial Engineers Materials Engineers Industrial Ecologists 	<ul style="list-style-type: none"> Quality Control Analysts Logistics Engineers Biostatisticians
<ul style="list-style-type: none"> Bus Drivers Flight Attendants Ambulance Drivers & Attendants 	<ul style="list-style-type: none"> Aircraft Cargo Handling Supervisors Supervisors of Laborers Taxi Drivers & Chauffeurs 	<ul style="list-style-type: none"> Air Traffic Controllers Light Truck or Delivery Services Drivers

Source: O*NET OnLine onetonline.org/find/career and onetonline.org/find/descriptor/browse/interests/

The 16 Career Clusters

Once you have an idea of the types of jobs available, you're ready to explore the Career Clusters section. Go to the appropriate cluster that best matches your work-related interests. The cluster pages have many more occupations listed than the charts from previous pages. These pages will tell you more about the cluster, its pathways, and related jobs. Additionally, you can:

- View job descriptions, employment data, and wages for selected careers.
- Learn about clubs to join, the appropriate math course to take, the WorkKeys skill levels to meet, the credentials and certifications to get, and the programs of study and majors at the New Mexico colleges that specialize in preparing students for these careers.
- Find additional online career resources including O*NET OnLine, which provides detailed information about each occupation in the cluster.

<p>Agriculture, Food & Natural Resources</p>  <p>pg 15-22</p>	<p>Architecture & Construction</p>  <p>pg 23-30</p>	<p>Arts, Audio/Video Technology & Communications</p>  <p>pg 31-38</p>	<p>Business, Management & Administration</p>  <p>pg 39-46</p>
<p>Education & Training</p>  <p>pg 47-54</p>	<p>Finance</p>  <p>pg 55-62</p>	<p>Government & Public Administration</p>  <p>pg 63-70</p>	<p>Health Science</p>  <p>pg 71-78</p>
<p>Hospitality & Tourism</p>  <p>pg 79-86</p>	<p>Human Services</p>  <p>pg 87-94</p>	<p>Information Technology</p>  <p>pg 95-102</p>	<p>Law, Public Safety, Corrections & Security</p>  <p>pg 103-110</p>
<p>Manufacturing</p>  <p>pg 111-118</p>	<p>Marketing, Sales & Service</p>  <p>pg 119-126</p>	<p>Science, Technology, Engineering & Mathematics</p>  <p>pg 127-134</p>	<p>Transportation, Distribution & Logistics</p>  <p>pg 135-142</p>



Agriculture, Food & Natural Resources

Think about life without agriculture, food and natural resources. What would we eat? Who would create and maintain the parks that help us relax and enjoy nature? Where would we get help for sick pets? This industry has a huge impact on our daily lives, and — like other industries — technology has brought about changes in the way it operates.

Large farms increasingly use precision-agriculture sensing technology, such as drones, to monitor soil conditions; GPS systems to help steer machinery more precisely; and computer-based maps to prescribe amounts of fertilizer, seed, and chemicals for specific areas. Bioscientists have developed genetically modified organisms (GMOs) that increase crop yield and resistance to pests and disease.

Organic farming, which seeks to avoid chemicals, continues to show economic growth. While responsible for only a little more than 4 percent of total U.S. food sales, sales of organic foods are more than two-and-a-half times greater now than they were 10 years ago.¹

The Agriculture, Food and Natural Resources cluster contains occupations that require all levels of training. Landscaping and groundskeeping workers and nonfarm animal caretaker positions are among the fastest-growing occupations that require the least training in this cluster. Jobs that usually require associate and bachelor's degrees such as veterinary technologists and technicians, environmental engineers, and cartographers and photogrammetrists are also projected to increase. Employers who often hire workers in this cluster include farmers; federal, state and local governments; pest control businesses; and landscaping companies.

¹ "Organic Market Overview." USDA Economic Research Service. U.S. Department of Agriculture, 7 Apr. 2014. ers.usda.gov/topics/natural-resources-environment/organic-agriculture/organic-market-overview.aspx

CAREER RESEARCH

- **United States Department of Agriculture National Institute of Food and Agriculture**
nifa.usda.gov
- **National Sustainable Agriculture Information Service/ Appropriate Technology Transfer for Rural Areas (ATTRA)**
attra.ncat.org
- **National FAA Organization**
ffa.org
- **Institute of Food Technologists**
ift.org
- **Soil Science Society of America**
soils.org/students
- **Nature Jobs**
nature.com/naturejobs
- **Conservation Job Board**
conservationjobboard.com
- **New Mexico Department of Workforce Solutions**
<https://www.jobs.state.nm.us>
- **New Mexico Agriculture in the Classroom**
<https://newmexico.agclassroom.org>
- **New Mexico Agricultural Education & FFA Association**
<http://www.nmffa.org>
- **Center for Agricultural and Environment Research and Training**
<http://www.caert.net>

Find more Agriculture, Food & Natural Resources occupations at onetonline.org/find/career?c=1



Core Skills

- Operation & Control
- Equipment Selection
- Management of Material Resources
- Repairing
- Science
- Management of Personnel Resources
- Equipment Maintenance
- Operation Monitoring
- Quality Control Analysis
- Troubleshooting



Natural Resources Systems Pathway

- | | | |
|------------|---|---|
| Occupation | <ul style="list-style-type: none"> • Architecture & Engineering
Mechanical Engineering Technicians; Other Engineering Technicians; Cartographers & Photogrammetrists • Construction & Extraction
First-Line Supervisors of Construction Trades & Extraction Workers; Earth Drillers, Except Oil & Gas • Education, Training & Library
Biological Science Teachers, Postsecondary; Recreation & Fitness Studies Teachers, Postsecondary • Farming, Fishing & Forestry
Logging Equipment Operators; First-Line Supervisors of Farming, Fishing & Forestry Workers | <ul style="list-style-type: none"> • Life, Physical & Social Science Management
Environmental Scientists & Specialists; Environmental Science & Protection Technicians; Zoologists & Wildlife Biologists; Forest & Conservation Technicians; Conservation Scientists; Foresters • Management
Natural Sciences Managers • Personal Care & Service
Recreation Workers • Transportation & Material Moving
Industrial Truck & Tractor Operators; Refuse & Recyclable Material Collectors; Excavating & Loading Machine & Dragline Operators; Conveyor Operators & Tenders Captains, Mates & Pilots of Water Vessels; Tank Car, Truck & Ship Loaders |
|------------|---|---|



Food Products & Processing Systems Pathway

Occupation

- **Building & Grounds Cleaning & Maintenance**
Pest Control Workers
- **Computer & Mathematical**
Computer User Support Specialists
- **Farming, Fishing & Forestry**
First-Line Supervisors of Farming, Fishing & Forestry Workers; Graders & Sorters of Agricultural Products; Agricultural Inspectors
- **Life, Physical & Social Science**
Chemical Technicians; Agricultural & Food Science Technicians; Food Scientists & Technologists
- **Office & Administrative Support**
First-Line Supervisors of Office & Administrative Support Workers
- **Production**
Slaughterers & Meat Packers; Meat, Poultry & Fish Cutters & Trimmers; Butchers & Meat Cutters; Food Batchmakers; Food & Tobacco Roasting, Baking & Drying Machine Operators & Tenders; Food Cooking Machine Operators & Tenders

Environmental Service Systems Pathway

Occupation

- **Architecture & Engineering**
Environmental Engineers; Environmental Engineering Technicians
- **Building & Grounds Cleaning & Maintenance**
Pest Control Workers
- **Construction & Extraction**
Hazardous Materials Removal Workers
- **Healthcare Practitioners & Technicians**
Occupational Health & Safety Specialists; Occupational Health & Safety Technicians
- **Life, Physical & Social Science**
Environmental Science & Protection Technicians
- **Production**
Water & Wastewater Treatment Plant & Systems Operators
- **Transportation & Material Moving**
Refuse & Recyclable Material Collectors

Animal Systems Pathway

Occupation

- **Farming, Fishing & Forestry**
First-Line Supervisors of Farming, Fishing & Forestry Workers
- **Healthcare Practitioners & Technicians**
Veterinary Technologists & Technicians; Veterinarians
- **Healthcare Support**
Veterinary Assistants & Laboratory Animal Caretakers
- **Life, Physical & Social Science**
Agricultural & Food Science Technicians; Zoologists & Wildlife Biologists
- **Personal Care & Service**
Animal Trainers
- **Sales & Sales Related**
First-Line Supervisors of Retail Sales Workers

Plant Systems Pathway

Occupation

- **Arts, Design, Entertainment, Sports & Media**
Floral Designers
- **Building & Grounds Cleaning & Maintenance**
Landscaping & Groundskeeping Workers; First-Line Supervisors of Landscaping, Lawn Service & Groundskeeping Workers; Tree Trimmers & Pruners; Pesticide Handlers, Sprayers & Applicators
- **Farming, Fishing & Forestry**
First-Line Supervisors of Farming, Fishing & Forestry Workers
- **Installation, Maintenance & Repair**
Farm Equipment Mechanics & Service Technicians
- **Life, Physical & Social Science**
Agricultural & Food Science Technicians; Soil & Plant Scientists; Biochemists & Biophysicists; Food Scientists & Technologists; Foresters; Economists
- **Sales & Sales Related**
Retail Salespersons; First-Line Supervisors of Retail Sales Workers

Agribusiness Systems Pathway

Occupation

- **Arts, Design, Entertainment, Sports & Media**
Graphic Designers, Audio & Video Equipment Technicians
- **Life, Physical & Social Science**
Food Scientists & Technologists
- **Sales & Sales Related**
Sales Reps, Wholesale & Manufacturing, Technical & Scientific Products

Power, Structural & Technical Systems Pathway

Occup.

- **Installation, Maintenance & Repair**
Aircraft Mechanics & Service Technicians; Mobile Heavy Equipment Mechanics; Farm Equipment Mechanics & Service Technicians
- **Sales & Sales Related**
Parts Salesperson



Selected Careers

Occupation ¹	Career Pathway	Job Description
Precision Agriculture Technicians	<ul style="list-style-type: none"> Animal Systems Food Products & Processing Systems Plant Systems 	Apply geospatial technologies, including geographic information systems (GIS) and Global Positioning System (GPS), to agricultural production or management activities, such as pest scouting, site-specific pesticide application, yield mapping, or variable-rate irrigation. May use computers to develop or analyze maps or remote sensing images to compare physical topography with data on soils, fertilizer, pests, or weather.
Biological Science Teachers, Postsecondary	<ul style="list-style-type: none"> Natural Resources Systems 	Teach postsecondary biological sciences courses. May also perform biological research and report findings.
Environmental Compliance Inspectors	<ul style="list-style-type: none"> Environmental Service Systems 	Investigate and evaluate situations to ensure that everyone follows environmental laws and regulations for licenses and permits.
Farm and Ranch Managers	<ul style="list-style-type: none"> Agribusiness Systems Food Products & Processing Systems 	Plan, direct, or coordinate the management or operation of farms, ranches, greenhouses, aquacultural operations, nurseries, timber tracts, or other agricultural establishments. May hire, train, or supervise farm workers or contract for services to carry out the day-to-day activities of the managed operation. May engage in or supervise planting, cultivating, harvesting, financial, or marketing activities.
Environmental Scientists and Specialists	<ul style="list-style-type: none"> Agribusiness Systems Food Products & Processing Systems 	Conduct research or perform investigation for the purpose of identifying, abating, or eliminating sources of pollutants or hazards that affect either the environment or the health of the population. Using knowledge of various scientific disciplines, may collect, synthesize, study, report, and recommend action based on data derived from measurements or observations of air, food, soil, water, and other sources.
Landscaping and Groundskeeping Workers	<ul style="list-style-type: none"> Plant Systems 	Landscape or maintain grounds of property using hand or power tools or equipment. Workers typically perform a variety of tasks, which may include any combination of the following: sod laying, mowing, trimming, planting, watering, fertilizing, digging, raking, sprinkler installation, and installation of mortarless segmental concrete masonry wall units.
Food Scientists and Technologists	<ul style="list-style-type: none"> Agribusiness Systems 	Research ways to make food safe, tasty, and healthy. Use sciences such as chemistry, microbiology, and engineering to study best ways to process foods and to understand why foods deteriorate. Analyze food to measure vitamins, fat, sugar, and protein. Discover new food sources.
Mobile Heavy Equipment Mechanics	<ul style="list-style-type: none"> Power, Structural & Technical Systems 	Adjust, repair, or overhaul mobile equipment such as cranes, bulldozers, graders, and conveyors. Inspect and maintain vehicles and machinery.
Veterinary Technologists and Technicians	<ul style="list-style-type: none"> Animal Systems 	Help diagnose and treat animal diseases by performing medical tests in a laboratory under a veterinarian's supervision. Prepare vaccines and tissue samples and take blood samples. Clean and sterilize instruments and maintain equipment and machines. May assist veterinarian during surgery.
Zoologists and Wildlife Biologists	<ul style="list-style-type: none"> Animal Systems Natural Resources Systems 	Research animal and wildlife behaviors, diseases, genetics, and life processes. May collect and analyze biological data to assess and predict environmental impacts of land and water use.

Source: Information about occupations, career pathways, job descriptions, and interests is from O*NET OnLine [onetonline.org](https://www.onetonline.org) data for annual openings, growth, and wages are based on the statewide 2012-2022 Occupational Projections prepared by the New Mexico Department of Workforce Solutions at <https://www.jobs.state.nm.us/vosnet/lmi/default.aspx?pu=1&plang=E>.

Notes:

1. The table lists a sampling of occupations that represent careers in each pathway. For a full list of occupations, go to O*NET OnLine at <http://www.onetonline.org/find/career?c=1>



Annual Average Openings ²	Growth Plus Replacement Needs in NM	NM Entry Annual Wage ³	NM Median Annual Wage ³	Minimum Education ⁴	Interest ⁵
36	Neutral	30,980	44,780	High	R, I and C
7	Growing	54,650	81,080	High	S and I
25	Neutral	33,800	58,630	High	C, I and R
152	Neutral	35,220	46,670	High	E, R and C
40	Neutral	52,970	71,100	High	E, R and C
138	Neutral	18,720	25,290	low	R and C
14	Neutral	37,000	67,910	High	I, R and C
20	Neutral	33,860	46,450	Low	R and C
9	Neutral	22,640	32,070	Middle	R and I
6	Neutral	42,990	53,860	High	I and R

2. Growth Plus Replacement Needs in NM includes the total number of jobs available due to growth and replacement needs per year.

3. The Occupational Employment Statistics OES program of the Bureau of Labor Statistics produces estimates of wages paid to employees in each occupation. These occupational wage estimates are either mean wages or percentiles. The mean of the first third of the wage distribution is used as a proxy for the entry wage. A percentile wage is a boundary. An occupational median wage (50th percentile) estimate is the boundary between the highest paid 50 percent and the lowest paid 50 percent of workers in that occupation. Half of the workers in each occupation earn more than the median wage, and half the workers earn less than the median wage.

4. Minimum Education Requirements for occupations are determined by the U.S. Bureau of Labor Statistics <http://www.bls.gov>. High Education = Doctoral or Professional Degree, Master's Degree, Bachelor's Degree; Middle Education = Associate's Degree, Postsecondary Certification; Low Education = Some College - No Degree, High School Diploma or Equivalent, Less than High School.

5. There are six interest types Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E), and Conventional (C). Discover your work-related interests on pages 5-8 to find out which types you are most like and the careers that best fit you.



Career Readiness Benchmarks for Agriculture Careers

The combined ACT WorkKeys skills benchmarks indicate that, across education groups, Level 4 is the lowest level of Locating Information and Reading for Information skills needed for the Agriculture career cluster. Additionally, all three education groups in the Agriculture career cluster require at least Level 5 for Applied Mathematics.

Education Group	Applied Mathematics	Reading for Information	Locating Information
SKILL LEVEL REQUIRED FOR 85% OF OCCUPATIONS			
Low Education Occupations	5	4	4
Middle Education Occupations	5	5	5
High Education Occupations	5	6	4



Workforce Certifications Agriculture, Food & Natural Resources Career Cluster:

Note: Students successfully exiting a course of study in the Agriculture, Food and Natural Resources Cluster may be eligible to earn some or all of these certifications.

- American Welding Society (AWS)
- National Center for Construction Education and Research (NCCER)
- NOCTI Horticulture Certification
- New Mexico Department of Agriculture: Meat/Dairy Animal Evaluation
- New Mexico Department of Agriculture: Companion Animal Care
- New Mexico Department of Agriculture: Plant Science
- New Mexico Department of Agriculture: Natural Resource Management
- New Mexico Department of Agriculture: Food Product Evaluation/Management
- New Mexico Department of Agriculture: Secondary Agriculture Business Management

Recommended Fourth Year of Mathematics Courses

- Agribusiness Systems Pathway - Statistics
- Animal Systems Pathway – Trigonometry
- Environmental Service Systems Pathway – Trigonometry
- Food Products and Processing Systems Pathway - Trigonometry
- Natural Resources Systems Pathway - Trigonometry
- Plant Systems Pathway - Trigonometry
- Power, Structural and Technical Systems - Trigonometry

Landscape Irrigator License



Postsecondary Programs, Degrees, and Colleges

Occupation	Postsecondary Program Name	NM Postsecondary School	Postsecondary Program Name	NM Postsecondary School
Precision Agriculture Technicians	Agriculture, General	Eastern New Mexico University; New Mexico State		
Biological Science Teachers, Postsecondary	Science Teacher Education/ General Science Teacher Education	Western New Mexico University; New Mexico Institute of Mining and Technology; New Mexico Highlands University; University of the Southwest		
Environmental Compliance Inspectors	Environmental Science	Central New Mexico Community College; Eastern New Mexico University-Main Campus; New Mexico Highlands University; New Mexico Institute of Mining and Technology; New Mexico State University-Main Campus; University of New Mexico-Main Campus		
Farm and Ranch Managers	Range Science and Management	New Mexico State University-Main Campus	Agribusiness/ Agricultural Business Operations	New Mexico State University-Main Campus; Mesalands Community College; Eastern New Mexico University-Main Campus
Environmental Scientists and Specialists	Environmental Studies	New Mexico State University-Main Campus; New Mexico Highlands University; Western New Mexico University	Environmental Science	University of New Mexico-Main Campus; Northern New Mexico College; Navajo Technical University; Eastern New Mexico University-Ruidoso Campus; Eastern New Mexico University-Main Campus; New Mexico Institute of Mining and Technology; University of New Mexico-Main Campus
Landscaping and Groundskeeping Workers	Landscaping and Groundskeeping	Central New Mexico Community College; San Juan College	Greenhouse Operations and Management	Santa Fe Community College
Food Scientists and Technologists	Agriculture, General	Eastern New Mexico University; New Mexico State		
Mobile Heavy Equipment Mechanics	Diesel Mechanics Technology/ Technician	Central New Mexico Community College; San Juan College		
Veterinary Technologists and Technicians	Veterinary/ Animal Health Technology/ Technician and Veterinary Assistant	Eastern New Mexico University-Roswell Campus; Central New Mexico Community College; San Juan College; Navajo Technical University		
Zoologists and Wildlife Biologists	Wildlife, Fish and Wildlands Science and Management	New Mexico State University-Main Campus; New Mexico Highlands University; Eastern New Mexico University	Zoology/Animal Biology	Western New Mexico University

Note: The schools listed on this page are a representative sampling of schools that offer the course of studies shown here. Please contact New Mexico colleges directly for more current and relevant offerings.



High School Gets You Ready for College and Career

Common Career Technical Core for Agriculture, Food & Natural Resources Career Cluster¹:

1. Analyze the Interaction among Agriculture, Food, and Natural Resources (ANFR) systems.
2. Evaluate the nature and scope of the Agriculture, Food & Natural Resources job sector and the role of the contained jobs in order to comprehend large and small-scale economic impacts.
3. Examine and summarize the importance of health, safety and management systems in Agriculture, Food & Natural Resources businesses.
4. Demonstrate stewardship of natural resources in Agriculture, Food & Natural Resources activities.
5. Describe career opportunities and means to achieve those opportunities in each of the Agriculture, Food & Natural Resources pathways.
6. Analyze the interaction among Agriculture, Food & Natural Resources systems in the production, processing and management of food, fiber and fuel and the sustainable use of natural resources.

Recommended Program of Study²

	9th Grade	10th Grade	11th Grade	12th Grade
Environmental Service Systems Pathway	0133 Intro to the Science of Ag	0134 Intro to the Physical Science of Ag	0136 Applied Science in Agriculture	0181 Environmental Science/Natural Resources
Animal Systems Pathway	0133 Intro to the Science of Ag	0161 Science of Large Ag Animals	0162 Science of Small Animals	0164 Veterinary Science

Other Programs of Study Course Sequences³

	9th Grade	10th Grade	11th Grade	12th Grade
Agribusiness Systems Pathway	0133 Intro to the Science of Ag	0136 Applied Science in Ag	0137 Agricultural Leadership/Communication	0171 Agricultural Economics and Business Management
Food Products and Processing Systems Pathway	0133 Intro to the Science of Ag	0136 Applied Science in AG	0161 Science of Large Ag Animals	0173 Science of Products and Processing
Natural Resources Systems Pathway	0133 Intro to the Science of Ag	0134 Intro to the Physical Science of Ag	0181 Environmental Science/Natural Resources	0182 Science of Wildlife and Forestry Management
Plant Systems Pathway	0133 Intro to the Science of Ag	0141 Science Horticulture/Botany	0143 Greenhouse/Nursery Operations	0145 Floriculture
Power, Structural & Technical Systems Pathway	0151 Intro to Ag Mechanics	0152 Ag Structures and Construction	0153 Metal Fabrication for the Ag Industry	0154 Ag Power and Machinery

1. It is expected that a student completing any Programs of Study in this Career Cluster would transition to postsecondary college and career being able to know and do each of these Standards, unless otherwise noted.

2. The PED recommends the Program of Study here based on rigor of the course, quality curriculum and course resources, relevant to State workforce needs, and a capstone class, dual credit course, or AP course and exam.

3. It is expected that a student completing these Programs of Study would transition to postsecondary prepared for college and career.

Note: The course numbers are from the State Teacher Accountability Reporting System (STARS). Examine your school's course catalog for corresponding course.



Architecture & Construction

New York's recently completed Freedom Tower took 10 years to build. Who designed and constructed it? You're probably not surprised to learn that architects, civil engineers, construction laborers, cement masons, concrete finishers, and structural iron and steel workers participated in its development. You've also likely thought about the elevator installers and repairers who installed 73 elevators, or about the HVAC mechanics and installers, plumbers, and electricians who created a healthy environment inside the tallest building in the Western Hemisphere.

Think a bit more deeply and you'll realize that cost estimators and operations research analysts used their mathematic and analytic skills to help make decisions about the nearly \$4 billion spent to construct the building. People in management positions coordinated the work of specialty trade contractors to ensure they provided quality work in a timely manner.

While New Mexico may not build a skyscraper the size of the Freedom Tower any time soon, the state's construction industry is expected to grow and show increases in the occupations mentioned above. These occupations require educational backgrounds that range from high school diplomas to graduate degrees. Workers may find employment with plumbing, heating and air conditioning contractors landscaping businesses; electrical contractors; federal, state, and local government; and commercial building companies.

CAREER RESEARCH

- **The American Institute of Architects**
aia.org/index.htm
- **Technology Student Association**
tsaweb.org
- **American Society of Civil Engineers**
asce.org/student_resources
- **The National Center for Construction Education and Research**
nccer.org
- **New Mexico Apprenticeships**
dws.state.nm.us/apprenticeship
- **SkillsUSA**
skillsusa.org
- **Green Jobs**
thegreenjobbank.com
- **Construction Jobs**
constructionjobs.com
- **New Mexico Department of Workforce Solutions**
<https://www.jobs.state.nm.us>

Find more Architecture & Construction occupations at onetonline.org/find/career?c=2



Core Skills

- Repairing
- Equipment Maintenance
- Installation
- Equipment Selection
- Operation & Control
- Troubleshooting
- Quality Control Analysis
- Technology Design
- Management of Material Resources



Design/Pre-Construction Pathway

Occupation

- **Architects, Except Landscape and Naval**
Civil Engineers; Civil Engineering Technicians; Architects, Except Landscape & Naval; Surveying & Mapping Technicians; Architectural & Civil Drafters; Other Engineers; Mechanical Drafters; Surveyors; Other Engineering Technicians; Electrical & Electronics Drafters; Cartographers & Photogrammerists; Landscape Architects
- **Arts, Design, Entertainment, Sports & Media**
Interior Designers
- **Computer & Mathematical**
Software Developers, Systems Software; Operations Research Analysts
- **Education, Training & Library**
Engineering Teachers, Postsecondary
- **Management**
Architectural & Engineering Managers



Construction Pathway

Occupation

- **Architecture & Engineering**
Other Engineering Technicians
- **Cost Estimators**
Prepare cost estimates for product manufacturing, construction projects, or services to aid management in bidding on or determining price of product or service. May specialize according to particular service performed or type of product manufactured.
- **Construction Laborers**
Perform tasks involving physical labor at construction sites. May operate hand and power tools of all types: air hammers, earth tampers, cement mixers, small mechanical hoists, surveying and measuring equipment, and a variety of other equipment and instruments. May clean and prepare sites, dig trenches, set braces to support the sides of excavations, erect scaffolding, and clean up rubble, debris and other waste materials. May assist other craft workers.
- **Installation, Maintenance & Repair**
Maintenance & Repair Workers, General; Heating, Air Conditioning & Refrigeration Mechanics & Installers; Helpers – Installation, Maintenance & Repair Workers; Electrical Power–Line Installers & Repairers; Security & Fire Alarm System Installers; Electrical & Electronics Repairers; Powerhouse, Substation & Relay Riggers
- **Education, Training & Library**
Postsecondary Sociology Teachers
- **Life, Physical & Social Science**
Sociologists; Other Social Scientists & Related Workers
- **Management**
Construction Managers
- **Production**
Woodworking Machine Setters, Operators & Tenders, Except Sawing; Welding, Soldering & Brazing Machine Setters, Operators & Tenders; Structural Metal Fabricators & Fitters; Electromechanical Equipment Assemblers; Stationary Engineers & Boiler Operators
- **Transportation & Material Moving**
Excavating & Loading Machine & Dragline Operators; Crane & Tower Operators; Conveyor Operators & Tenders; Commercial Pilots; Railroad Conductors & Yardmasters

Maintenance/Operations Pathway

Occupation

- **Building & Grounds Cleaning & Maintenance**
Landscaping & Groundskeeping Workers
- **Construction & Extraction**
Highway Maintenance Workers; Other Construction & Related Workers
- **Heating, Air Conditioning, and Refrigeration Mechanics and Installers**
Install or repair heating, central air conditioning, or refrigeration systems, including oil burners, hot-air furnaces, and heating stoves.
- **Production**
Stationary Engineers & Boiler Operators





Selected Careers

Occupation ¹	Career Pathway	Job Description
Architects	<ul style="list-style-type: none"> Design/Pre-Construction 	Plan and design private homes, office buildings, theaters, factories, and other structures.
Architectural and Engineering Managers	<ul style="list-style-type: none"> Design/Pre-Construction 	Plan, direct, and coordinate activities in architecture and engineering businesses. May also oversee research and development in these fields.
Cost Estimators	<ul style="list-style-type: none"> Design/Pre-Construction 	Prepare cost estimates for product manufacturing, construction projects, or services to aid management in bidding on or determining price of product or service. May specialize according to particular service performed or type of product manufactured.
Construction Laborers	<ul style="list-style-type: none"> Construction 	Perform tasks involving physical labor at construction sites. May operate hand and power tools of all types: air hammers, earth tampers, cement mixers, small mechanical hoists, surveying and measuring equipment, and a variety of other equipment and instruments. May clean and prepare sites, dig trenches, set braces to support the sides of excavations, erect scaffolding, and clean up rubble, debris and other waste materials. May assist other craft workers.
Construction Carpenters	<ul style="list-style-type: none"> Construction 	Build, install, and repair wooden structures like joists, rafters, stairways, hardwood floors, and window and door frames. May also install cabinets, siding, drywall, and insulation.
Construction Managers	<ul style="list-style-type: none"> Construction 	Plan, direct, or coordinate construction and maintenance of buildings, facilities, and systems. Oversee project organization, scheduling, budgeting, and implementation. Includes managers in specialized construction fields like carpentry or plumbing.
Electricians	<ul style="list-style-type: none"> Construction 	Install, maintain, and repair electrical wiring, equipment, and fixtures. Make sure that work meets relevant codes. May install or service street lights, intercom systems, or electrical control systems.
Operating Engineers and Other Construction Equipment Operators	<ul style="list-style-type: none"> Maintenance/Operations 	Operate one or several types of power construction equipment, such as motor graders, bulldozers, scrapers, compressors, pumps, derricks, shovels, tractors, or front-end loaders to excavate, move, and grade earth, erect structures, or pour concrete or other hard surface pavement. May repair and maintain equipment in addition to other duties.
Plumbers	<ul style="list-style-type: none"> Construction 	Assemble, install, or repair pipes, fittings, or fixtures of heating, water, or drainage systems, according to specifications or plumbing codes.
Heating and Air Conditioning Mechanics and Installers	<ul style="list-style-type: none"> Maintenance/Operations 	Install or repair heating, central air conditioning, or refrigeration systems, including oil burners, hot-air furnaces, and heating stoves.

Source: Information about occupations, career pathways, job descriptions, and interests is from O*NET OnLine [onetonline.org](http://www.onetonline.org) data for annual openings, growth, and wages are based on the statewide 2012-2022 Occupational Projections prepared by the New Mexico Department of Workforce Solutions at <https://www.jobs.state.nm.us/vosnet/lmi/default.aspx?pu=1&plang=E>.

Notes:

1. The table lists a sampling of occupations that represent careers in each pathway. For a full list of occupations, go to O*NET OnLine at <http://www.onetonline.org/find/career?c=1>



Annual Average Openings ²	Growth Plus Replacement Needs in NM	NM Entry Annual Wage ³	NM Median Annual Wage ³	Minimum Education ⁴	Interest ⁵
11	Neutral	\$48,440	\$69,740	High	A and I
60	Neutral	\$89,940	\$151,890	High	E, R and I
27	Neutral	\$35,880	\$54,730	High	C and E
350	Neutral	\$23,640	\$29,900	Low	R and C
79	Neutral	\$27,210	\$36,970	Low	R, C and I
40	Neutral	\$51,750	\$78,140	High	E, R and C
103	Neutral	\$33,400	\$48,640	Middle	R, I and C
513	Neutral	32,160	39,960	Low	R, C and I
48	Neutral	\$30,520	\$42,790	Middle	R and C
31	Neutral	\$28,540	\$41,270	Middle	R, C and I

2. Growth Plus Replacement Needs in NM includes the total number of jobs available due to growth and replacement needs per year.

3. The Occupational Employment Statistics OES program of the Bureau of Labor Statistics produces estimates of wages paid to employees in each occupation. These occupational wage estimates are either mean wages or percentiles. The mean of the first third of the wage distribution is used as a proxy for the entry wage. A percentile wage is a boundary. An occupational median wage (50th percentile) estimate is the boundary between the highest paid 50 percent and the lowest paid 50 percent of workers in that occupation. Half of the workers in each occupation earn more than the median wage, and half the workers earn less than the median wage.

4. Minimum Education Requirements for occupations are determined by the U.S. Bureau of Labor Statistics <http://www.bls.gov>. High Education = Doctoral or Professional Degree, Master's Degree, Bachelor's Degree; Middle Education = Associate's Degree, Postsecondary Certification; Low Education = Some College - No Degree, High School Diploma or Equivalent, Less than High School.

5. There are six interest types Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E), and Conventional (C). Discover your work-related interests on pages 5-8 to find out which types you are most like and the careers that best fit you.



Career Readiness Benchmarks for Architecture and Construction Careers

The combined ACT WorkKeys skills benchmarks indicate that, across education groups, Level 4 is the lowest level of Locating Information and Reading for Information skills needed for Architecture and Construction careers. Additionally, all three education groups in the Architecture career cluster require at least Level 5 for Applied Mathematics.

Education Group	Applied Mathematics Range (3-7)	Reading for Information Range (3-7)	Locating Information Range (3-6)
SKILL LEVEL REQUIRED FOR 85% OF OCCUPATIONS			
Low Education Occupations	5	4	4
Middle Education Occupations	5	5	5
High Education Occupations	6	6	5



Workforce Certifications for the Architecture and Construction Career Cluster:

Note: Students successfully exiting a course of study in the Architecture and Construction Cluster may be eligible to earn some or all of these certifications.

NCCER:

- Pre apprenticeship
- Core
- Construction Technology

NCCR:

- Carpentry
- Electrical
- Construction Technology
- Masonry
- Plumbing

Precision Exams Certifications:

- Woodworking
- Cabinetmaking
- Carpentry

Certport Assessment

Certification:

- Autodesk REVIT Architecture Certified User Heavy Line
- Inventor 2016 User
- AutoCAD 2016 User

OSHA 10

WCA Passport

Recommended Fourth Year of Mathematics Courses

- Design/Pre-Construction Pathway - Trigonometry or Pre-Calculus
- Construction Pathway - Construction Math or Statistics
- Maintenance/Operations Pathway - Construction Math or Statistics



Postsecondary Programs, Degrees, and Colleges

Occupation	Postsecondary Program Name	NM Postsecondary School	Postsecondary Program Name	NM Postsecondary School
Architects, Except Landscape and Naval	Architecture	University of New Mexico- Main Campus		
Architectural and Engineering Managers	Surveying Engineering	Central New Mexico Community College	Construction Engineering	University of New Mexico- Main Campus
Carpenters	Carpentry/Carpenter	University of New Mexico- Gallup Campus, Navajo Technical University, New Mexico State University- Doña Ana		
Construction Managers	Business Administration and Management, General	New Mexico Highlands University; University of the Southwest	Business/Commerce, General	New Mexico State University- Doña Ana
Electricians	Electrician	Northern New Mexico College; New Mexico State University-Grants; Central New Mexico Community College		
Operating Engineers and Other Construction Equipment Operators	Certification: Associate Constructor	Certifying Organization: American Institute of Constructors & Constructor Certification Commission		
Plumbers, Pipefitters, and Steamfitters	Plumbing Technology/ Plumber	Central New Mexico Community College; Santa Fe Community College	Pipefitting/Pipefitter and Sprinkler Fitter	New Mexico State University- Doña Ana
Construction Laborers	Certification: Associate Constructor	Certifying Organization: American Institute of Constructors & Constructor Certification Commission		
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	Heating, Air Conditioning, Ventilation and Refrigeration Maintenance Technology/ Technician	New Mexico State University- Doña Ana; Clovis Community College; Central New Mexico Community College; Eastern New Mexico University- Roswell Campus		
Cost Estimators	Construction Engineering	University of New Mexico- Main Campus	Materials Engineering	New Mexico Institute of Mining and Technology

Note: The schools listed on this page are a representative sampling of schools that offer the course of studies shown here. Please contact New Mexico colleges directly for more current and relevant offerings.



High School Gets You Ready for College and Career

Common Career Technical Core for the Architecture and Construction Career Cluster¹:

1. Use vocabulary, symbols and formulas common to architecture and construction.
2. Use architecture and construction skills to create and manage a project.
3. Comply with regulations and applicable codes to establish and manage a legal and safe workplace.
4. Evaluate the nature and scope of the Architecture and Construction Career Cluster and the role of architecture and construction in society and the economy.
5. Describe the roles, responsibilities and relationships found in the architecture and construction trades and professions, including labor/management relationships.
6. Read, interpret and use technical drawings, documents and specifications to plan a project.
7. Describe career opportunities and means to achieve those opportunities in each of the Architecture and Construction Career Pathways.

Recommended Program of Study²

	9th Grade	10th Grade	11th Grade	12th Grade
Construction Pathway	0480 NCCER Core Curriculum-Introduction to Craft Skills	0481 NCCER Carpentry Level 1	0482 NCCER Carpentry Level 2	0483 NCCER Carpentry Level 3

Other Programs of Study Course Sequences³

	9th Grade	10th Grade	11th Grade	12th Grade
Design/Pre-Construction Pathway: Engineering Technologies	0702 Drafting-General	0715 Architectural Engineering II	0716 Architectural Engineering III	Dual Credit in Architecture - or - 0717 Architectural Engineering IV
Design/Pre-Construction Pathway: Drafting Technologies	0702 Drafting-General	0473 Building Maintenance	0707 Computer Design and Software	Dual Credit in Architecture - or - 0717 Architectural Engineering IV
Maintenance/Operations Pathway	0402 Construction	0473 Building Maintenance	0495 Construction Trades	0498 Construction Trades Internship

1. It is expected that a student completing any Programs of Study in this Career Cluster would transition to postsecondary college and career being able to know and do each of these Standards, unless otherwise noted.

2. The PED recommends the Program of Study here based on rigor of the course, quality curriculum and course resources, relevant to State workforce needs, and a capstone class, dual credit course, or AP course and exam.

3. It is expected that a student completing these Programs of Study would transition to postsecondary prepared for college and career.

Note: The course numbers are from the State Teacher Accountability Reporting System (STARS). Examine your school's course catalog for corresponding course.



Arts, Audio/Video Technology & Communications

Cultural and leisure activities help us balance our work and personal lives. In Arts, Audio/Video Technology and Communications, a great variety of people work to give us movies, paintings, music downloads, books, and museums. Actors, artists, musicians, writers, and archivists obviously make their living in jobs that are part of this cluster. Less evident are the employees who work in the background at occupations like set designers, agents and business managers, audio and video equipment technicians, print binding and finishing workers, and historians.

As in many clusters, technology has required workers to learn new skills. Lighting and sound systems are quite different than they were even a decade ago, providing new multi-media options for staging performances and exhibits. Publishers use technologies to create e-books that are far different from those used for print versions.

Most occupations in the Arts, Audio/Video Technology and Communications cluster are expected to show average or less growth in the next decade, but several careers do show strong growth. Among them are technical writers, telecommunications line installers and repairers, interior designers, and audio and video equipment technicians. However, in New Mexico, the Film and Television Industry continues to hire local talent for in front of the camera and especially behind the camera technical positions as well as film editing. Approximately two thirds of the careers in this industry require postsecondary education, particularly a bachelor's degree. Industries that often have employment for this cluster's workers include wired telecommunication companies, newspaper publishers (print and electronic), commercial printing companies, television stations, and electrical contractors.

CAREER RESEARCH

- **Actors' Equity Association**
actorsequity.org/home.asp
- **The Society of Professional Audio Recording Services**
spars.com
- **Technology Student Association**
tsaweb.org
- **The Association for Women in Sports Media**
awsmonline.org
- **The New Mexico Film Office**
nmfilm.com
- **The Art Career Project**
theartcareerproject.com/art-as-a-career/
- **AV Job Listing**
avjoblistings.com
- **New Mexico Department of Workforce Solutions**
<https://www.jobs.state.nm.us>

Find more Arts, Audio/Video Technology & Communications occupations at onetonline.org/find/career?c=3



Core Skills

- Equipment Selection
- Technology Design
- Time Management
- Installation
- Operations Analysis
- Active Learning
- Reading Comprehension
- Coordination
- Persuasion
- Active Listening



Production & Managerial Arts Pathway

Occupation

- **Arts, Design, Entertainment, Sports & Media**
Graphic Designers; Photographers; Multimedia Artists & Animators; Audio & Video Equipment Technicians; Commercial & Industrial Designers; Other Media & Communication Workers; Broadcast Technicians; Craft Artists; Fine Artists, Including Painters, Sculptors & Illustrators. Other Media & Communication Workers; Broadcast Technicians
- **Computer & Mathematical**
Computer Programmers
- **Education, Training & Library**
Art, Drama & Music Teachers, Postsecondary; Curators
- **Management**
Technical Directors/Managers
- **Installation, Maintenance & Repair**
Telecommunications Equipment Installers & Repairers, Except Line Installers; Computer, Automated Teller & Office Machine Repairers; Telecommunications Line Installers & Repairers



Media and Design Arts

Occupation

- **Arts, Design, Entertainment, Sports & Media**
Graphic Designers; Photographers; Multimedia Artists & Animators; Interior Designers; Art Directors; Commercial & Industrial Designers; Craft Artists; Fine Artists, Including Painters, Sculptors & Illustrators ; Photographers; Writers & Authors; Editors; Producers & Directors; Audio & Video Equipment Technicians; Technical Writers; Radio & Television Announcers; Other Media & Communication Workers; Broadcast Technicians
- **Virtual Reality**
Graphic Designers; Photographers; Multimedia Artists & Animators
- **Education, Training & Library**
Art, Drama & Music Teachers; Other Postsecondary Teachers; English Language & Literature Teachers, Postsecondary; Communications Teachers, Postsecondary; Career/Technical Education Teachers, Secondary School; Vocational Education Teacher, Postsecondary
- **Production**
Photographic Process Workers & Processing Machine Operators; Painting, Coating & Decorating Workers; Printing Press Operators; Print Binding & Finishing Workers; Printing Press Operators; Print Binding & Finishing Workers

Performing Arts Pathway

Occupation

- **Arts, Design, Entertainment, Sports & Media**
Writers & Authors; Musicians & Singers; Producers & Directors; Other Entertainers & Performers, Sports & Related Workers; Craft Artists; Fine Artists, including Painters, Sculptors & Illustrators
- **Education, Training & Library**
Art, Drama & Music Teachers, Postsecondary
- **Management**
Agents & Business Managers
- **Transportation & Material Moving**
Manual Laborers & Freight, Stock & Material Movers





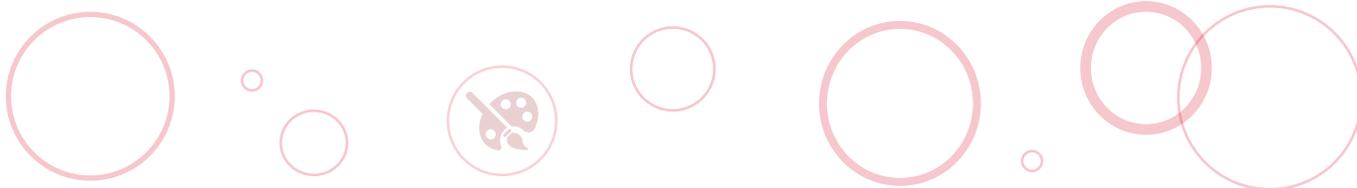
Selected Careers

Occupation ¹	Career Pathway	Job Description
Audio and Video Equipment Technicians	<ul style="list-style-type: none"> Production and Managerial Arts 	Set up or set up and operate audio and video equipment including microphones, sound speakers, video screens, projectors, video monitors, recording equipment, connecting wires and cables, sound and mixing boards, and related electronic equipment for the movies, concerts, sports events, meetings and conventions, presentations, and news conferences.
Laborers and Freight, Stock, and Material Movers, Hand and Grip	<ul style="list-style-type: none"> Production and Managerial Arts 	Repair, maintain, or install computers, word processing systems, automated teller machines, and electronic office machines, such as duplicating and fax machines.
Directors- Stage, Motion Pictures, Television, and Radio	<ul style="list-style-type: none"> Production and Managerial Arts 	Produce or direct stage, television, radio, video, or motion picture productions for entertainment, information, or instruction. Responsible for creative decisions.
Film and Video Editors	<ul style="list-style-type: none"> Production and Managerial Arts 	Plan, coordinate, or edit content of material for publication. May review proposals and drafts for possible publication. Includes technical editors.
Graphic Designers	<ul style="list-style-type: none"> Media and Design Arts 	Design or create graphics to meet specific commercial or promotional needs, such as packaging, displays, or logos. May use a variety of mediums to achieve artistic or decorative effects.
Multimedia Artists and Animators	<ul style="list-style-type: none"> Media and Design Arts Production and Managerial Arts 	Create special effects, animation, or other visual images using film, video, computers or other electronic tools and media. Make products like computer games, movies, music videos, and commercials.
Art, Drama, and Music Teachers, Postsecondary	<ul style="list-style-type: none"> Performing Arts Media and Design Arts 	Teach courses in drama, music, and the arts including fine and applied art, such as painting and sculpture, or design and crafts. Includes both teachers primarily engaged in teaching and those who do a combination of teaching and research.
Technical Writers	<ul style="list-style-type: none"> Media and Design Arts 	Write technical materials, such as equipment manuals, appendices, or operating and maintenance instructions. May assist in layout work.
Musicians, Instrumental	<ul style="list-style-type: none"> Performing Arts 	Play one or more musical instruments in recital, in accompaniment, or as members of an orchestra, band, or other musical group.
Teachers and Instructors	<ul style="list-style-type: none"> Performing Arts Media and Design Arts 	Plan, organize and implement an appropriate instructional program in a learning environment that guides and encourages students to develop and fulfill their academic potential in the Arts and Media.

Source: Information about occupations, career pathways, job descriptions, and interests is from O*NET OnLine [onetonline.org](http://www.onetonline.org) data for annual openings, growth, and wages are based on the statewide 2012-2022 Occupational Projections prepared by the New Mexico Department of Workforce Solutions at <https://www.jobs.state.nm.us/vosnet/lmi/default.aspx?pu=1&plang=E>.

Notes:

1. The table lists a sampling of occupations that represent careers in each pathway. For a full list of occupations, go to O*NET OnLine at <http://www.onetonline.org/find/career?c=1>



Annual Average Openings ²	Growth Plus Replacement Needs in NM	NM Entry Annual Wage ³	NM Median Annual Wage ³	Minimum Education ⁴	Interest ⁵
18	Neutral	\$26,300	\$36,700	Middle	R, I and C
302	Neutral	\$19,700	\$24,970	Low	R, C and I
13	Growing	\$27,910	\$65,370	High	E and A
18	Neutral	\$17,800	\$48,710	High	A, E and C
24	Neutral	\$23,320	\$36,420	High	A, R and E
7	Neutral	\$38,380	\$56,290	High	A and I
14	Neutral	\$47,070	\$64,970	High	S and A
13	Neutral	\$46,110	\$70,550	High	A, I, C
3	Neutral	\$9.33 per hour	\$25.14 per hour	High	A and E
346	High	\$32,850	\$52,150	High	S, A and E

- Growth Plus Replacement Needs in NM includes the total number of jobs available due to growth and replacement needs per year.
- The Occupational Employment Statistics OES program of the Bureau of Labor Statistics produces estimates of wages paid to employees in each occupation. These occupational wage estimates are either mean wages or percentiles. The mean of the first third of the wage distribution is used as a proxy for the entry wage. A percentile wage is a boundary. An occupational median wage (50th percentile) estimate is the boundary between the highest paid 50 percent and the lowest paid 50 percent of workers in that occupation. Half of the workers in each occupation earn more than the median wage, and half the workers earn less than the median wage.
- Minimum Education Requirements for occupations are determined by the U.S. Bureau of Labor Statistics <http://www.bls.gov>. High Education = Doctoral or Professional Degree, Master's Degree, Bachelor's Degree; Middle Education = Associate's Degree, Postsecondary Certification; Low Education = Some College - No Degree, High School Diploma or Equivalent, Less than High School.
- There are six interest types Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E), and Conventional (C). Discover your work-related interests on pages 5-8 to find out which types you are most like and the careers that best fit you.



Career Readiness Benchmarks for Arts, A/V Technology and Communications Careers

The combined ACT WorkKeys skills benchmarks indicate that, across education groups, Level 4 is the lowest level of Locating Information and Applied Mathematics skills needed for Arts, Audio Video Technology, and Communications careers. Additionally, all three education groups in the Arts career cluster require at least Level 5 for Reading for Information.

Education Group	Applied Mathematics Range (3-7)	Reading for Information Range (3-7)	Locating Information Range (3-6)
SKILL LEVEL REQUIRED FOR 85% OF OCCUPATIONS			
Low Education Occupations	4	5	4
Middle Education Occupations	4	5	4
High Education Occupations	5	5	5



Workforce Certifications for Arts, A/V, Technology and Communications Career Cluster:

Note: Students successfully exiting a course of study in the Arts, Audio/Visual Technology and Communications Cluster may be eligible to earn some or all of these certifications.

Precision Exams: Video Production I Certificate in Film Production

NOCTI: Audio Visual Communications

Adobe Certified Associate (ACA): 2. Graphic Design & Illustration Using Adobe Illustrator

Recommended Fourth Year of Mathematics Courses

- Audio and Video Technology and Film Pathway – Trigonometry
- Printing Technology Pathway – Trigonometry
- Visual Arts Pathway - Algebra II
- Performing Arts Pathway - Algebra II
- Journalism and Broadcasting Pathway – Trigonometry
- Telecommunications Pathway - Pre-Calculus



Postsecondary Programs, Degrees, and Colleges

Occupation	Postsecondary Program Name	NM Postsecondary School	Postsecondary Program Name	NM Postsecondary School
Audio and Video Equipment Technicians	Photographic and Film/Video Technology/Technician and Assistant	Northern New Mexico College; New Mexico State University-Doña Ana; Santa Fe Community College		
Laborers and Freight, Stock, and Material Movers, Hand	No Certification Needed			
Directors- Stage, Motion Pictures, Television, and Radio	Film/Cinema/Video Studies	University of New Mexico- Main Campus	Drama and Dramatics/ Theatre Arts, General	San Juan College
Film and Video Editors	Cinematography and Film/Video Production	Central New Mexico Community College; New Mexico Highlands University ; New Mexico State University-Main Campus	Documentary Production	Santa Fe Community College
Graphic Designers	Commercial and Advertising Art	San Juan College; Clovis Community College	Digital Arts	University of New Mexico
Multimedia Artists and Animators	Animation, Interactive Technology, Video Graphics and Special Effects	New Mexico State University	Game and Interactive Media Design	Luna Community College
Art, Drama, and Music Teachers, Postsecondary	Music Teacher Education	University of New Mexico- Main Campus; New Mexico State University-Main Campus	Fine/Studio Arts, General	Eastern New Mexico University-Ruidoso Campus; Santa Fe Community College; Clovis Community College; New Mexico State University-Main Campus; Western New Mexico University
Technical Writers	Professional, Technical, Business, and Scientific Writing	New Mexico Institute of Mining and Technology		
Musicians, Instrumental	Music Performance, General	New Mexico State University-Main Campus	Visual and Performing Arts, General	Northern New Mexico College
Teachers and Instructors	Secondary Education	University of New Mexico- Main Campus; Central New Mexico Community College; New Mexico Highlands University; San Juan College; Eastern New Mexico University-Main Campus; New Mexico State University-Main	Bilingual and Multilingual Education	Clovis Community College; Santa Fe Community College

Note: The schools listed on this page are a representative sampling of schools that offer the course of studies shown here. Please contact New Mexico colleges directly for more current and relevant offerings.



High School Gets You Ready for College and Career

Common Career Technical Core for Arts, A/V, Technology and Communications Career Cluster¹:

1. Analyze the interdependence of the technical and artistic elements of various careers within the Arts, A/V Technology and Communications Career Cluster.
2. Analyze the importance of health, safety and environmental management systems, policies and procedures common in arts, audio/video technology and communications activities and facilities.
3. Analyze the lifestyle implications and physical demands required in the arts, audio/video technology and communications workplace.
4. Analyze the legal and ethical responsibilities required in the arts, audio/video technology and communications workplace.
5. Describe the career opportunities and means to achieve those opportunities in each of the Arts, A/V Technology and Communications Career Pathways.
6. Evaluate technology advancements and tools that are essential to occupations within the Arts, A/V Technology and Communications Career Cluster.
7. Describe career opportunities and means to achieve those opportunities in each of the Architecture and Construction Career Pathways.

Recommended Program of Study²

	9th Grade	10th Grade	11th Grade	12th Grade
Production & Managerial Arts	1189 Business of Arts, Media and Entertainment	1172 Film and Digital Media	1176 Film and Digital Media II	Dual Credit in the Production & Managerial Arts – or 1183 AP Studio Art-Drawing Portfolio

Other Programs of Study Course Sequences³

	9th Grade	10th Grade	11th Grade	12th Grade
Media and Design Arts	1189 Business of Arts, Media and Entertainment	0315 Computer Graphics	0307 Computer Graphics II	Dual Credit in Media and Design – or – 0336 AP Computer Science Principles
Performing Arts	1189 Business of Arts, Media and Entertainment	Select from the following: <ul style="list-style-type: none"> • Drama-Acting/ Performance • Dance Technique • Music performance (band, orchestra choir) 	1196 Fine and Performing Art-Independent Study	Dual Credit in Entrepreneurship – or – Dual credit in theater, dance, or arts

1. It is expected that a student completing any Programs of Study in this Career Cluster would transition to postsecondary college and career being able to know and do each of these Standards, unless otherwise noted.

2. The PED recommends the Program of Study here based on rigor of the course, quality curriculum and course resources, relevant to State workforce needs, and a capstone class, dual credit course, or AP course and exam.

3. It is expected that a student completing these Programs of Study would transition to postsecondary prepared for college and career.

Note: The course numbers are from the State Teacher Accountability Reporting System (STARS). Examine your school's course catalog for corresponding course.



Business Management & Administration

In New Mexico, we are likely to see moderate new job growth in the Business Management and Administration career cluster in the next decade. Since almost any workplace benefits from strong leadership and organizational support, business and management occupations exist in all industries. Many of us value the peace of mind that comes from knowing that we have other options if we lose our current jobs. More than most clusters, business administration includes careers that move relatively easily from one industry or location to another. Recently, the U.S. Bureau of Labor Statistics listed a dozen careers that offer this kind of flexibility. The list included occupations from business management:

- Customer service representatives
- Secretaries and administrative assistants, except legal, medical, and executive
- General and operations managers
- General office clerks
- Accountants and auditors
- Management analysts
- Financial managers
- Human resources specialists
- Sales managers

Work environments match the functions of specific businesses. While

CAREER RESEARCH

- **Business Professionals of America**
bpa.org
- **Future Business Leaders of America/Phi Beta Lambda**
fbla-pbl.org
- **Professionals In Human Resources Association™**
pihra.org
- **Project Management Institute**
pmi.org
- **DECA**
deca.org
- **Administration Jobs**
administrationjobs.com
- **New Mexico Small Business Development Center Network**
<http://www.nmsbdc.org/about-us.aspx>
- **New Mexico Department of Workforce Solutions**
<https://www.jobs.state.nm.us>

Find more Business, Management & Administration occupations at onetonline.org/find/career?c=4



Core Skills

- Management of Financial Resources
- Mathematics
- Writing
- Programming
- Reading Comprehension
- Negotiation
- Persuasion
- Speaking
- Operations Analysis
- System Analysis



Operations Management Pathway

Occupation

- Business & Financial Operations
Management Analysis; Budget Analysis
- Computer & Mathematical
Computer Programmers; Other Computer Occupations; Database Administrators; Operations Research Analysts
- Education, Training & Library
Engineering Teachers, Postsecondary
- Management
Computer & Information Systems Managers; Natural Sciences Managers



Administrative Support Pathway

Occupation

- **Arts, Design, Entertainment, Sports & Media**
Public Relations Specialists
- **Office & Administrative Support**
Customer Service Reps; Secretaries & Administrative Assistants, Except Legal, Medical & Executive; Office Clerks, General; Stock Clerks & Order Fillers; First-Line Supervisors of Office & Administrative Support Workers; Receptionists & Information Clerks; Executive Secretaries & Executive Administrative Assistants; Shipping, Receiving & Traffic Clerks; Medical Secretaries; Postal Service Mail Carriers; Interviewers, Except

Eligibility & Loan; Insurance Claims & Policy Processing Clerks; Human Resources Assistants, Except Payroll & Timekeeping; Order Clerks; Other Office & Administrative Support Workers; Mail Clerks & Mail Machine Operators, Except Postal Service; New Account Clerks; Postal Service Mail Sorters, Processors & Processing Machine Operators; Weighers, Measurers, Checkers & Samplers, Recordkeeping; File Clerks; Library Assistants, Clerical; Legal Secretaries; Couriers & Messengers; Procurement Clerks; Cargo & Freight Agents; Postal Service Clerks

Business Information Management Pathway

Occupation

- **Business & Financial Operations**
Accountants & Auditors; Financial Analysts; Credit Analysts; Tax Preparers; Tax Examiners & Collectors & Revenue Agents; Budget Analysts; Financial Examiners
- **Computer & Mathematical**
Statisticians
- **Education, Training & Library**
Business Teachers, Postsecondary; Mathematical Science Teachers, Postsecondary

- **Management**
Other Managers; Financial Managers; Chief Executives; Natural Sciences Managers
- **Office & Administrative Support**
Bookkeeping, Accounting & Auditing Clerks; Billing & Posting Clerks; Payroll & Timekeeping Clerks; Brokerage Clerks; Statistical Assistants

Human Resources Management Pathway

Occupation

- **Business & Financial Operations**
Human Resources Specialists; Training & Development Specialists; Compensation, Benefits & Job Analysis Specialists; Labor Relations Specialists
- **Education, Training & Library**
Business Teachers, Postsecondary

- **Management**
Human Resources Managers; Training & Development Managers; Compensation & Benefits Managers
- **Office & Administrative Support**
Human Resources Assistants, Except Payroll & Timekeeping

General Management Pathway

Occupation

- **Arts, Designs, Entertainment, Sports & Media**
Public Relations Specialists
- **Business & Financial Operations**
Management Analysts; Market Research Analysts & Marketing Specialists; Cost Estimators; Logisticians
- **Computer & Mathematical**
Operations Research Analysts
- **Education, Training & Library**
Business Teachers, Postsecondary; Communications Teachers, Postsecondary; Economics Teachers, Postsecondary
- **Installation, Maintenance & Repair**
First-Line Supervisors of Mechanics, Installers & Repairers
- **Life, Physical & Social Science**
Survey Researchers; Economists

- **Management**
General & Operations Managers; Other Managers; Construction Managers; Computer & Information Systems Managers; Medical & Health Services Managers; Sales Managers; Industrial Production Managers; Administrative Services Managers; Chief Executives; Social & Community Service Managers; Transportation, Storage & Distribution Managers; Purchasing Managers; Public Relations & Fundraising Managers; Advertising & Promotions Managers
- **Office & Administrative Support**
First-Line Supervisors of Office & Administrative Support Workers
- **Production**
First-Line Supervisors of Production & Operating Workers





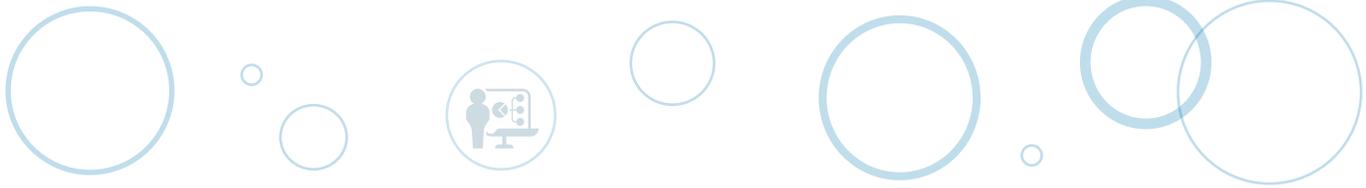
Selected Careers

Occupation ¹	Career Pathway	Job Description
Cost Estimators	<ul style="list-style-type: none"> Business Information Management 	Prepare cost estimates for product manufacturing, construction projects, or services to aid management in bidding on or determining price of product or service.
General and Operations Managers	<ul style="list-style-type: none"> General Management 	Plan, direct, or coordinate the way organizations operate. Set policies, manage daily operations, and plan the use of materials and human resources. Responsibilities vary depending on setting within an organization. Examples of settings include offices like personnel, purchasing, or administrative services.
Human Resources Managers	<ul style="list-style-type: none"> General Management 	Plan, direct, and coordinate the administrative functions of an organization. Oversee the recruiting, interviewing, and hiring of new staff; consult with top executives on strategic planning; and serve as a link between an organization's management and its employees.
Human Resources Specialists	<ul style="list-style-type: none"> Human Resources Management 	Perform human resource activities like screening, recruiting, interviewing, and placing workers.
Online Merchants	<ul style="list-style-type: none"> Business Information Management 	Conduct retail activities of businesses operating exclusively online. May perform duties such as preparing business strategies, buying merchandise, managing inventory, implementing marketing activities, fulfilling and shipping online orders, and balancing financial records.
Administrative Service Managers	<ul style="list-style-type: none"> Administrative Support Business Information Management 	Study an organization to recommend ways to improve its efficiency. Advise managers about how to reduce costs and increase revenue. Plan, direct, or coordinate one or more administrative services of an organization, such as records and information management, mail distribution, facilities planning and maintenance, custodial operations, and other office support.
Management Analysts	<ul style="list-style-type: none"> General Management 	Conduct organizational studies and evaluations, design systems and procedures, conduct work simplification and measurement studies, and prepare operations and procedures manuals to assist management in operating more efficiently and effectively. Includes program analysts and management consultants.
Secretaries and Administrative Assistants	<ul style="list-style-type: none"> Administrative Support Business Information Management 	Perform routine clerical and administrative duties. Responsibilities include drafting correspondence, scheduling appointments, organizing and maintaining paper and electronic files, and providing information to callers.
Training and Development Specialists	<ul style="list-style-type: none"> Administrative Support Business Information Management Human Resources Management 	Design and lead training programs to improve employees' skills and knowledge. May analyze training needs.

Source: Information about occupations, career pathways, job descriptions, and interests is from O*NET OnLine onetonline.org data for annual openings, growth, and wages are based on the statewide 2012-2022 Occupational Projections prepared by the New Mexico Department of Workforce Solutions at <https://www.jobs.state.nm.us/vosnet/lmi/default.aspx?pu=1&plang=E>.

Notes:

1. The table lists a sampling of occupations that represent careers in each pathway. For a full list of occupations, go to O*NET OnLine at <http://www.onetonline.org/find/career?c=1>



Annual Average Openings ²	Growth Plus Replacement Needs in NM	NM Entry Annual Wage ³	NM Median Annual Wage ³	Minimum Education ⁴	Interest ⁵
27	Neutral	\$35,880	\$54,730	High	C, E
503	Neutral	\$43,780	\$82,840	Middle	C and E
71	Neutral	\$62,840	\$88,580	High	E, C and S
70	Neutral	\$36,640	\$56,180	Middle	E, S and C
30	Neutral	\$39,180	\$62,700	High	E, C and R
34	Neutral	\$54,300	\$80,870	Low	E and C
72	Neutral	\$44,570	\$70,290	High	I, E and C
252	Neutral	\$23,700	\$32,680	Low	E, A and S
48	Neutral	\$34,730	\$50,870	High	C and E

- Growth Plus Replacement Needs in NM includes the total number of jobs available due to growth and replacement needs per year.
- The Occupational Employment Statistics OES program of the Bureau of Labor Statistics produces estimates of wages paid to employees in each occupation. These occupational wage estimates are either mean wages or percentiles. The mean of the first third of the wage distribution is used as a proxy for the entry wage. A percentile wage is a boundary. An occupational median wage (50th percentile) estimate is the boundary between the highest paid 50 percent and the lowest paid 50 percent of workers in that occupation. Half of the workers in each occupation earn more than the median wage, and half the workers earn less than the median wage.
- Minimum Education Requirements for occupations are determined by the U.S. Bureau of Labor Statistics <http://www.bls.gov>. High Education = Doctoral or Professional Degree, Master's Degree, Bachelor's Degree; Middle Education = Associate's Degree, Postsecondary Certification; Low Education = Some College - No Degree, High School Diploma or Equivalent, Less than High School.
- There are six interest types Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E), and Conventional (C). Discover your work-related interests on pages 5-8 to find out which types you are most like and the careers that best fit you.



Career Readiness Benchmarks for Business Management & Administration Careers

The combined ACT WorkKeys skills benchmarks indicate that for the high education group, Level 5 is the lowest level of Locating Information, Applied Mathematics, and Reading for Information skills needed for Business Management and Administration careers.

Education Group	Applied Mathematics Range (3-7)	Reading for Information Range (3-7)	Locating Information Range (3-6)
SKILL LEVEL REQUIRED FOR 85% OF OCCUPATIONS			
Low Education Occupations	4	4	4
Middle Education Occupations	NA	NA	NA
High Education Occupations	5	5	5

Career Technical Student Organization



**BUSINESS
professionals
OF AMERICA**
Today's students. Tomorrow's business professionals.



**EDUCATORS
RISING**
NEW MEXICO



DECA



FFA

Workforce Certifications for the Business Management and Administration Career Cluster:

Note: Students successfully exiting a course of study in the Business Management and Administration Career Cluster may be eligible to earn some or all of these certifications.

- Precision Exams: Exploring Business and Marketing
- Precision Exams: Business Management
- OSHA: Business

A*S*K Assessment of Skills and Knowledge for Business

- ### Recommended Fourth Year of Mathematics Courses
- Operations Management Pathway - Pre-Calculus
 - Human Resources Management Pathway – Pre-Calculus
 - Business Information Pathway — Pre-Calculus
 - General Management Pathway Pathway - Pre-Calculus
 - Administrative Support Pathway - Pre-Calculus



Postsecondary Programs, Degrees, and Colleges

Occupation	Postsecondary Program Name	NM Postsecondary School	Postsecondary Program Name	NM Postsecondary School
Cost Estimators	Business/Commerce, General	New Mexico State University; University of the Southwest;	Business Administration and Management, General	New Mexico Highlands University; Luna Community College; Southwestern Indian Polytechnic Institute
General and Operations Managers	Business/Commerce, General	New Mexico State University; University of the Southwest;	Business Administration and Management, General	New Mexico Highlands University; Luna Community College; Southwestern Indian Polytechnic Institute
Human Resources Managers	Human Resources Management/Personnel Administration, General	Central New Mexico Community College; Eastern New Mexico University-Roswell Campus		
Human Resources Specialists	Human Resources Management/Personnel Administration, General	Central New Mexico Community College; Eastern New Mexico University-Roswell Campus		Eastern New Mexico University-Roswell Campus
Online Merchants	Certification in Certified E-Marketing Analyst from Institute of Certified E-Commerce Consultants			
Administrative Service Managers	Business/Commerce	Central New Mexico Community College; Southwestern Indian Polytechnic Institute; New Mexico State University-Carlsbad; New Mexico State University-Grants; New Mexico State University-Doña Ana		
Management Analysts	Business Administration and Management	New Mexico State University-Doña Ana; University of New Mexico-Taos Campus; San Juan College; Central New Mexico Community College; Eastern New Mexico University-Roswell Campus; University of New Mexico-Main Campus	Business/Commerce, General	Western New Mexico University; New Mexico State University-Alamogordo; New Mexico State University-Main Campus; Central New Mexico Community College
Secretaries and Administrative Assistants	Administrative Assistant and Secretarial Science, General	Clovis Community College; Santa Fe Community College; Eastern New Mexico University-Roswell Campus; San Juan College; Central New Mexico Community College; University of New Mexico-Gallup Campus	Executive Assistant/Executive Secretary	Northern New Mexico College
Training and Development Specialists	Human Resources Management/Personnel Administration, General	Central New Mexico Community College; Eastern New Mexico University-Roswell Campus		
Customer Service Representatives	Certification: Accredited Customer Service Representative	Certifying Organization: The Institutes		

Note: The schools listed on this page are a representative sampling of schools that offer the course of studies shown here. Please contact New Mexico colleges directly for more current and relevant offerings.



High School Gets You Ready for College and Career

Common Career Technical Core for the Business Management & Administration Career Cluster:

1. Utilize mathematical concepts, skills and problem solving to obtain necessary information for decision making in business.
2. Describe laws, rules and regulations as they apply to effective business operations.
3. Explore, develop and apply strategies for ensuring a successful business career.
4. Identify, demonstrate and implement solutions in managing effective business customer relations.
5. Implement systems, strategies and techniques used to manage information in a business.
6. Implement, monitor and evaluate business processes to ensure efficiency and quality results.

Recommended Program of Study²

	9th Grade	10th Grade	11th Grade	12th Grade
General Management	0221 Introductory Business	0226 General Business	0225 Financial Services	2060 AP Statistics - or - Dual Credit in Business

Other Programs of Study Course Sequences³

	9th Grade	10th Grade	11th Grade	12th Grade
Administrative Support	0302 General Computer Applications	0270 Computer/Business Technologies	0303 Business Computer Applications	0224 Business Ownership and Management Entrepreneurship
Business Information Management	0221 Introductory Business	0232 Business Computer Skills for the Work Place	0271 Database Design and Programming	2060 AP Statistics - or - Dual Credit in Business
Human Resource Management	0221 Introductory Business	0223 Business Management	0240 Business Communications	0267 Human Resource Management
Operations Management	0221 Introductory Business	0223 Business Management	0206 Data Management	0224 Business Ownership and Management Entrepreneurship

1. It is expected that a student completing any Programs of Study in this Career Cluster would transition to postsecondary college and career being able to know and do each of these Standards, unless otherwise noted.
2. The PED recommends the Program of Study here based on rigor of the course, quality curriculum and course resources, relevant to State workforce needs, and a capstone class, dual credit course, or AP course and exam.
3. It is expected that a student completing these Programs of Study would transition to postsecondary prepared for college and career.

Note: The course number are from the State Teacher Accountability Reporting System (STARS). Examine your school's course catalog for corresponding course.



Education & Training

Lifelong learning is a phrase we hear often. Finishing high school and other necessary training is the first step toward getting a job, and keeping our jobs often requires that we continue to update our skills. To meet these ongoing training needs, education options have broadened to include online training. Technology like electronic textbooks, notebooks, and smart boards support classroom innovations while also requiring educators to upgrade their technology skills and teaching techniques.

Most occupations in the Education and Training cluster require at least a bachelor's degree, with many postsecondary teaching professionals holding a doctoral or professional degree. Occupations with the most new jobs over the next 10 years are likely to include elementary, preschool, and middle school teachers. College-level health specialties teachers occupy the top position for highest estimated percentage increase in jobs.

Schedules for education workers vary by work setting. Preschool through high school employees work directly with students for approximately eight hours and often devote additional time at home to grading papers and planning lessons. Before- and after-school workers' schedules revolve around times when students aren't in class, and coaches may work directly with students for hours beyond the usual class schedule. Industries that tend to offer many jobs for workers in this cluster include public and private schools, colleges and universities, as well as day care centers.

CAREER RESEARCH

- Association for Career & Technical Education acteonline.org
- National Coordinating Council for Career and Technical Student Organizations ctsos.org
- Future Educators Association futureeducators.org
- TEACH teach.org
- Teaching jobs teachers-teachers.com
- k-12 jobs k-12jobs.com
- National Association of Special Education Teachers naset.org
- School Spring schoolspring.com
- National Science Teachers Association nsta.org
- NM Public Education Department <https://webnew.ped.state.nm.us>
- Educators Rising New Mexico <https://educatorsrisingnm.nmsu.edu>
- New Mexico Department of Workforce Solutions <https://www.jobs.state.nm.us>

Find more Education & Training occupations at onetonline.org/find/career?c=5



Core Skills

- Instructing
- Learning Strategies
- Writing
- Active Learning
- Speaking
- Reading Comprehension
- Systems Evaluation
- Service Orientation
- Management of Personnel Resources
- Monitoring



Professional Support Services Pathway

Occupation

- Community & Social Service
Educational, Guidance, School & Vocational Counselors
- Education, Training & Library
Librarians; Other Postsecondary Teachers; Library Technicians
- Life, Physical & Social Science
Clinical, Counseling, & School Psychologists
- Office & Administrative Support
Library Assistants, Clerical



Teaching/Training Pathway

Occupation

- **Arts, Design, Entertainment, Sports & Media**

Coaches & Scouts; Writers & Authors; Athletes & Sports Competitors

- **Education, Training & Library**

Elementary School Teachers, Except Special Education; Teacher Assistants; Secondary School Teachers, Postsecondary; Secondary School Teachers, Except Special & Career/Technical Education; Middle School Teachers, Except Special & Career/Technical Education; Preschool Teachers, Except Special Education; Health Specialties Teachers, Postsecondary; Special Education Teachers, Kindergarten & Elementary School; Other Teachers & Instructors; Vocational Education Teachers, Postsecondary; Self-Enrichment Education Teachers; Career/Technical Education Teachers, Secondary School; Adult Basic & Secondary Education & Literacy Teachers & Instructors; Librarians; Kindergarten Teachers, Except Special Education; Special Education Teachers, Secondary School; Instructional Coordinators; Other Postsecondary Teachers; English Language & Literature Teachers, Postsecondary; Special Education Teachers, Middle School; Business Teachers, Postsecondary; Nursing Instructors & Teachers, Postsecondary; Education Teachers, Postsecondary; Biological Science Teachers, Postsecondary; Mathematical Science Teachers, Postsecondary; Criminal Justice & Law Enforcement Teachers, Postsecondary; Computer Science Teachers, Postsecondary; Foreign Language

& Literature Teachers, Postsecondary; History Teachers, Postsecondary; Career/Technical Education Teachers, Middle School; Recreation & Fitness Studies Teachers, Postsecondary; Philosophy & Religion Teachers, Postsecondary; Chemistry Teachers, Postsecondary; Engineering Teachers, Postsecondary; Communications Teachers, Postsecondary; Sociology Teachers, Postsecondary; Political Science Teachers, Postsecondary; Special Education Teachers, Preschool; Curators; Law Teachers, Postsecondary; Physics Teachers, Postsecondary; Economics Teachers, Postsecondary; Social Work Teachers, Postsecondary

- **Healthcare Practitioners & Technicians**

Dietitians & Nutritionists

- **Installation, Maintenance & Repair**

Home Appliance Repairers

- **Personal Care & Service**

Recreation Workers; Fitness Trainers & Aerobics Instructors

Administration & Administrative Support Pathway

Occupation

- **Arts, Design, Entertainment, Sports & Media**

Coaches & Scouts

- **Education, Training & Library**

Instructional Coordinators; Recreation & Fitness Studies Teachers, Postsecondary

- **Management**

Education Administrators, Elementary & Secondary School; Education Administrators, Postsecondary; Education Administrators, Preschool & Childcare Center/Program; Other Education Administrators

- **Personal Care & Service**

Fitness Trainers & Aerobics Instructors





Selected Careers



Occupation ¹	Career Pathway	Job Description
Adult Basic and Secondary Education and Literacy Teachers and Instructors	<ul style="list-style-type: none"> Teaching/Training 	Teach basic reading, math, writing, GED preparation, or English as a second language. Teaching may take place in a traditional school or in other settings.
Education Administrators, Preschool and Childcare Center/ Program	<ul style="list-style-type: none"> Teaching/Training 	Plan, direct, or coordinate the academic and nonacademic activities of preschool and childcare centers or programs.
Educational, Guidance, School, and Vocational Counselors	<ul style="list-style-type: none"> Professional Support Services 	Counsel individuals and provide group educational and career counseling services. Help people develop social, academic, and career skills.
Fitness Trainers and Aerobics Instructors	<ul style="list-style-type: none"> Professional Support Services 	Instruct or coach groups or individuals in activities like cardiovascular exercise, strength training, and stretching. Demonstrate techniques and form. Observe participants and explain ways to improve their skills.
Receptionists and Information Clerks	<ul style="list-style-type: none"> Professional Support Services 	Answer inquiries and provide information to the general school community members, visitors, and other interested parties regarding activities conducted and location of departments, offices, and staff within the school or District office.
School Business Managers & Officers	<ul style="list-style-type: none"> Administration & Administrative Support 	Plan, direct, and coordinate accounting, banking, purchasing, and other financial activities of a School or School District office.
Elementary School Teachers	<ul style="list-style-type: none"> Teaching/Training 	Teach students basic academic, social, and other formative skills in public or private schools at the elementary level.
Special Education Teachers, Kindergarten and Elementary School	<ul style="list-style-type: none"> Teaching/Training 	Teach school subjects to kindergarten and elementary students who have a wide range of learning, mental, emotional, or physical disabilities. Adapt general education lessons to meet students' needs.
Secondary School Teachers	<ul style="list-style-type: none"> Teaching/Training 	Teach students in one or more subjects, such as English, mathematics, or social studies at the secondary level in public or private schools. May be designated per subject matter specialty.
Teacher Assistants	<ul style="list-style-type: none"> Teaching/Training 	Perform duties that are instructional in nature or deliver direct services to students or parents. Serve in a position for which a teacher has ultimate responsibility for the design and implementation of educational programs and services.

Source: Information about occupations, career pathways, job descriptions, and interests is from O*NET OnLine onetonline.org data for annual openings, growth, and wages are based on the statewide 2012-2022 Occupational Projections prepared by the New Mexico Department of Workforce Solutions at <https://www.jobs.state.nm.us/vosnet/lmi/default.aspx?pu=1&plang=E>.

Notes:

1. The table lists a sampling of occupations that represent careers in each pathway. For a full list of occupations, go to O*NET OnLine at <http://www.onetonline.org/find/career?c=1>



Annual Average Openings ²	Growth Plus Replacement Needs in NM	NM Entry Annual Wage ³	NM Median Annual Wage ³	Minimum Education ⁴	Interest ⁵
13	Neutral	\$21,920	\$28,910	High	S, A and E
18	Growing	\$32,430	\$41,330	High	S, E and C
51	Neutral	\$37,540	\$55,320	High	S, E and C
42	Neutral	\$23,240	\$37,910	Middle	S
207	Neutral	\$20,310	\$26,200	Low	C, E and S
66	Neutral	\$59,080	\$91,430	High	E and C
235	Neutral	\$40,280	\$56,250	High	S, A and C
21	Neutral	\$40,480	\$58,580	High	S and I
195	Neutral	\$37,740	\$53,780	High	S, A and E
249	Neutral	\$17,460	\$22,110	Low	S and R

2. Growth Plus Replacement Needs in NM includes the total number of jobs available due to growth and replacement needs per year.

3. The Occupational Employment Statistics OES program of the Bureau of Labor Statistics produces estimates of wages paid to employees in each occupation. These occupational wage estimates are either mean wages or percentiles. The mean of the first third of the wage distribution is used as a proxy for the entry wage. A percentile wage is a boundary. An occupational median wage (50th percentile) estimate is the boundary between the highest paid 50 percent and the lowest paid 50 percent of workers in that occupation. Half of the workers in each occupation earn more than the median wage, and half the workers earn less than the median wage.

4. Minimum Education Requirements for occupations are determined by the U.S. Bureau of Labor Statistics <http://www.bls.gov>. High Education = Doctoral or Professional Degree, Master's Degree, Bachelor's Degree; Middle Education = Associate's Degree, Postsecondary Certification; Low Education = Some College - No Degree, High School Diploma or Equivalent, Less than High School.

5. There are six interest types Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E), and Conventional (C). Discover your work-related interests on pages 5-8 to find out which types you are most like and the careers that best fit you.



Career Readiness Benchmarks for Education & Training Careers

The combined ACT WorkKeys skills benchmarks indicate that for the high education group, Level 5 is the lowest level of Locating Information, Applied Mathematics, and Reading for Information skills needed for Education and Training careers. The scores shown for the middle education group is the average for the three careers listed for that category on p50.

Education Group	Applied Mathematics Range (3-7)	Reading for Information Range (3-7)	Locating Information Range (3-6)
SKILL LEVEL REQUIRED FOR 85% OF OCCUPATIONS			
Low Education Occupations	4	4	4
Middle Education Occupations	3	5	4
High Education Occupations	5	5	5

Career Technical Student Organization

Workforce Certifications for Education & Training Career Cluster

Note: Students successfully exiting a course of study in the Education and Training Cluster may be eligible to earn some or all of these certifications.

- Pre-professional Certification in Education Careers
- Early Childcare Certification
- Educational Aide Certification II
- Para Pro (Educational Aids)
- NM Early Care Education and Family Support

Recommended Fourth Year of Mathematics Courses

- Administration and Administrative Support Pathway – Statistics
- Professional Support Services Pathway - Statistics
- Teaching/Training Pathway - Statistics



Postsecondary Programs, Degrees, and Colleges

Occupation	Postsecondary Program Name	NM Postsecondary School	Postsecondary Program Name	NM Postsecondary School
Adult Basic and Secondary Education and Literacy Teachers and Instructors	Multicultural Education	Central New Mexico Community College	Teaching English as a Second or Foreign Language/ESL Language Instructor	University of the Southwest; Santa Fe Community College
Education Administrators, Preschool and Childcare Center/Program	Educational Leadership and Administration, General	University of New Mexico-Main Campus; Western New Mexico University; New Mexico Highlands University; New Mexico State University-Main Campus		
Educational, Guidance, School, and Vocational Counselors	Counselor Education/School Counseling and Guidance Services	Eastern New Mexico University-Main Campus; University of New Mexico-Main Campus; New Mexico State University-Main; New Mexico Highlands University		
Fitness Trainers and Aerobics Instructors	Health and Physical Education/Fitness, General	Santa Fe Community College; Clovis Community College; Clovis Community College	Physical Fitness Technician	Clovis Community College; Central New Mexico Community College
Receptionists and Information Clerks	Administrative Assistant Certification from Penn Foster Career School			
School Business Managers & Officers	Accounting and Business/Management	Central New Mexico Community College		
Nursing Instructors and Teachers, Postsecondary	Registered Nursing/Registered Nurse	University of New Mexico-Taos Campus; New Mexico State University-Main Campus		
Special Education Teachers, Kindergarten and Elementary School	Special Education and Teaching, General	University of New Mexico-Main Campus; New Mexico Highlands University; New Mexico State University-Main Campus	Education/Teaching of Individuals with Speech or Language Impairments	New Mexico State University-Main Campus
Vocational Education Teachers, Postsecondary	Truck and Bus Driver/Commercial Vehicle Operator and Instructor	San Juan College: Central New Mexico Community College; Eastern New Mexico University-Roswell Campus	Health Occupations Teacher Education	Eastern New Mexico University-Main Campus
Teacher Assistants	Teacher Assistant/Aide	Eastern New Mexico University-Roswell Campus; New Mexico State University-Doña Ana; Central New Mexico Community College; New Mexico State University-Carlsbad		

Note: The schools listed on this page are a representative sampling of schools that offer the course of studies shown here. Please contact New Mexico colleges directly for more current and relevant offerings.



High School Gets You Ready for College and Career

Common Career Technical Core for Education & Training Career Cluster¹:

1. Apply communication skills with students, parents and other groups to enhance learning and a commitment to learning.
2. Demonstrate effective oral, written and multimedia communication in multiple formats and contexts.
3. Use critical thinking to process education communications, perspectives, policies and/or procedures.
4. Evaluate and manage risks to safety, health and the environment in education and training settings.
5. Demonstrate group collaboration skills to enhance professional education and training practice.
6. Analyze ethical and legal policies of professional education and training practice.
7. Explain legal rights that apply to individuals and practitioners within education and training settings.
8. Demonstrate ethical and legal behavior within and outside of education and training settings.
9. Demonstrate state specific professional development requirements to maintain employment and to advance in an education and training career.
10. Apply organizational skills and logic to enhance professional education and training practice.
11. Demonstrate group management skills that enhance professional education and training practice.

Recommended Program of Study²

Pathway	9th Grade	10th Grade	11th Grade	12th Grade
Teaching/Training	0550 Child Development	0562 Teacher Academy 1	0563 Teacher Academy 2	Dual Credit: Introduction to Teaching & Practicum -or- 0597 Teaching and Practicum

Other Programs of Study Course Sequences³

Pathway	9th Grade	10th Grade	11th Grade	12th Grade
Administration & Administration Support	0221 Introductory Business	0226 General Business	0223 Business Management	Dual Credit in Accounting -or- 2060 AP Statistics

1. It is expected that a student completing any Programs of Study in this Career Cluster would transition to postsecondary college and career being able to know and do each of these Standards, unless otherwise noted.
 2. The PED recommends the Program of Study here based on rigor of the course, quality curriculum and course resources, relevant to State workforce needs, and a capstone class, dual credit course, or AP course and exam.
 3. It is expected that a student completing these Programs of Study would transition to postsecondary prepared for college and career.

Note: The course numbers are from the State Teacher Accountability Reporting System (STARS). Examine your school's course catalog for corresponding course.



Finance

Money is an essential element in each of our lives. We entrust our financial well-being to people who safeguard bank accounts, provide loans, insure cars and homes, and help us make wise investments. Their math skills must be strong, and they must be precise, paying close attention to detail and keeping accurate records. Workers also need good communication skills in order to respond to questions and clearly explain information. They must be service oriented and sometimes work with people who are under stress about their finances.

Finance jobs exist in settings that range from banks to tax return centers to private offices. Most large organizations like hospitals have finance employees. While financial specialists usually have an 8 to 5 schedule, some workers' schedules must accommodate their clients' after work hours. Tax preparers have intense work times from the beginning of January until April 15.

In New Mexico, the majority of finance occupations require a high school education or a bachelor's degree. The finance industry shows one of the highest rates of new jobs in the state, and occupations in the securities, commodities, and other financial investments sector should have some of the state's highest average weekly wages. Likely places to find jobs include banks, corporate management offices, insurance agencies, insurance underwriting companies, and office of Certified Public Accountants.

CAREER RESEARCH

- **National Association of Business Economics**
nabe.com
- **American Bankers Association**
aba.com/Pages/default.aspx
- **National Coordinating Council for Career and Technical Student Organizations**
ctsos.org
- **Future Business Leaders of America/Phi Beta Lambda**
fbla-pbl.org
- **DECA**
deca.org
- **New Mexico Association of School Business Officials**
<https://nmasbo.org/careers/>
- **New Mexico Department of Workforce Solutions**
<https://www.jobs.state.nm.us>

Find more Finance occupations at
oneline.org/find/career?c=6



Core Skills

- Mathematics
- Reading Comprehension
- Management of Financial Resources
- Persuasion
- Speaking
- Negotiation
- Writing
- Active Listening
- Critical Thinking
- Service Orientation



Business Financial Management Pathway

Occup.

- Business & Financial Operations
Financial Analysts

Financial & Investment Planning Pathway

Occupation

- Business & Financial Operations
Loan Officers; Financial Analysts; Personal Financial Advisors; Other Financial Specialists; Credit Analysts; Tax Preparers; Budget Analysts
- Education, Training & Library
Business Teachers, Postsecondary
- Office & Administrative Support
Brokerage Clerks
- Sales & Sales Related
Sales Reps, Wholesale & Manufacturing, Except Technical & Scientific Products; Insurance Sales Agents; Telemarketers



Insurance Services Pathway

Occupation

- **Business & Financial Operations**
Claims Adjusters, Examiners & Investigators; Insurance Underwriters
- **Computer & Mathematical**
Actuaries
- **Education, Training & Library**
Business Teachers, Postsecondary
- **Office & Administrative Support**
Insurance Claims & Policy Processing Clerks
- **Sales & Sales Related**
Sales Reps, Wholesale & Manufacturing, Except Technical & Scientific Products; Insurance Sales Agents; Telemarketers

Banking & Related Services Pathway

Occupation

- **Business & Financial Operations**
Loan Officers; Credit Analysts
- **Legal**
Title Examiners, Abstractors & Searchers
- **Office & Administrative Support**
Tellers; Bill & Account Collectors; Loan Interviewers & Clerks; New Account Clerks; Credit Authorizers, Checkers, & Clerks





Selected Careers

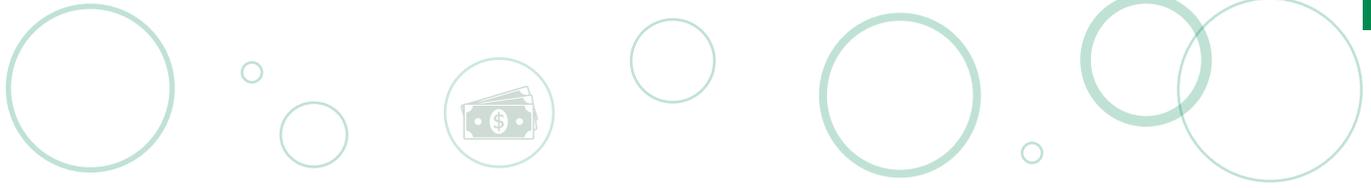


Occupation ¹	Career Pathway	Job Description
Insurance Adjusters, Examiners, and Investigators	<ul style="list-style-type: none"> Insurance Services 	Review settled insurance claims to make sure payments and settlements follow company guidelines. Consult attorneys about claims that need to go to court. May also settle insurance claims.
Treasurers and Controllers	<ul style="list-style-type: none"> Business Financial Management 	Direct financial activities, such as planning, procurement, and investments for all or part of an organization.
Financial Analysts	<ul style="list-style-type: none"> Business Financial Management Financial & Investment Planning 	Use mathematical and statistical knowledge to analyze information that affects investment programs like stocks and bonds.
Financial Managers	<ul style="list-style-type: none"> Financial & Investment Planning 	Produce financial reports, direct investment activities, and develop strategies to meet an organization's long-term financial goals. Coordinate accounting, investing, banking, insurance, securities, and other financial activities of an establishment.
Insurance Sales Agents	<ul style="list-style-type: none"> Insurance Services 	Contact potential customers to sell them life, property, casualty, health, automotive, or other types of insurance. Explain various insurance policies and help clients choose plans that suit them. May refer clients to independent brokers, work as an independent broker, or be employed by an insurance company.
Insurance Claims Clerks	<ul style="list-style-type: none"> Insurance Services 	Obtain information from insured or designated persons for purpose of settling claim with insurance carrier.
Loan Officers	<ul style="list-style-type: none"> Business Financial Management Financial & Investment Planning 	Evaluate, authorize, or recommend approval of commercial, real estate, or credit loans. Advise borrowers about conditions of the loan and payment methods. Includes mortgage loan officers and agents, collection analysts, loan servicing officers, and loan underwriters.
Personal Financial Advisors	<ul style="list-style-type: none"> Business Financial Management Financial & Investment Planning 	Advise clients about financial plans using knowledge of tax and investment strategies, securities, insurance, pension plans, and real estate. Evaluate clients' assets, liabilities, cash flow, insurance coverage, tax status, and financial goals.
Securities, Commodities, and Financial Services Sales Agents	<ul style="list-style-type: none"> Financial & Investment Planning 	Buy and sell securities or commodities in investment and trading firms. Provide financial services to businesses and individuals. May advise customers about stocks, bonds, mutual funds, commodities, and market conditions.
Customer Service Representatives	<ul style="list-style-type: none"> Business Financial Management 	Interact with customers to provide information in response to inquiries about products and services and to handle and resolve complaints.

Source: Information about occupations, career pathways, job descriptions, and interests is from O*NET OnLine onetonline.org data for annual openings, growth, and wages are based on the statewide 2012-2022 Occupational Projections prepared by the New Mexico Department of Workforce Solutions at <https://www.jobs.state.nm.us/vosnet/lmi/default.aspx?pu=1&plang=E>.

Notes:

1. The table lists a sampling of occupations that represent careers in each pathway. For a full list of occupations, go to O*NET OnLine at <http://www.onetonline.org/find/career?c=1>



Annual Average Openings ²	Growth Plus Replacement Needs in NM	NM Entry Annual Wage ³	NM Median Annual Wage ³	Minimum Education ⁴	Interest ⁵
30	Neutral	\$36,180	\$61,130	High	C and E
66	Neutral	\$59,080	\$91,430	High	C and E
15	Neutral	\$53,530	\$76,480	High	C, I and E
66	Neutral	\$59,080	\$91,430	High	C and E
75	Growing	\$26,970	\$36,770	Middle	E, C and S
32	Neutral	\$27,890	\$31,840	Low	C and E
34	Neutral	\$31,820	\$53,710	Low	I and C
31	Growing	\$48,650	\$83,130	High	C, E and S
23	Neutral	\$30,290	\$42,770	Middle	E and C
434	Neutral	\$22,270	\$28,970	Low	E, S and C

2. Growth Plus Replacement Needs in NM includes the total number of jobs available due to growth and replacement needs per year.

3. The Occupational Employment Statistics OES program of the Bureau of Labor Statistics produces estimates of wages paid to employees in each occupation. These occupational wage estimates are either mean wages or percentiles. The mean of the first third of the wage distribution is used as a proxy for the entry wage. A percentile wage is a boundary. An occupational median wage (50th percentile) estimate is the boundary between the highest paid 50 percent and the lowest paid 50 percent of workers in that occupation. Half of the workers in each occupation earn more than the median wage, and half the workers earn less than the median wage.

4. Minimum Education Requirements for occupations are determined by the U.S. Bureau of Labor Statistics <http://www.bls.gov>. High Education = Doctoral or Professional Degree, Master's Degree, Bachelor's Degree; Middle Education = Associate's Degree, Postsecondary Certification; Low Education = Some College - No Degree, High School Diploma or Equivalent, Less than High School.

5. There are six interest types Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E), and Conventional (C). Discover your work-related interests on pages 5-8 to find out which types you are most like and the careers that best fit you.



Career Readiness Benchmarks for Finance Careers

The combined ACT WorkKeys skills benchmarks indicate that, across the low and high education groups, Level 5 is the lowest level of Locating Information skills needed for Finance careers. The scores shown for the middle education group is the average for the three careers listed for that category on p50.

Education Group	Applied Mathematics Range (3-7)	Reading for Information Range (3-7)	Locating Information Range (3-6)
SKILL LEVEL REQUIRED FOR 85% OF OCCUPATIONS			
Low Education Occupations	4	5	5
Middle Education Occupations	4	5	5
High Education Occupations	5	6	5



Workforce Certifications for the Finance Career Cluster:

Note: Students successfully exiting a course of study in the Finance Cluster may be eligible to earn some or all of these certifications.

Precision Exams: Accounting

Precision Exams: Personal Finance Responsibility

Precision Exams: Banking and Finance

- Recommended Fourth Year of Mathematics Courses**
- Securities: Statistics
 - Business Finance: Statistics
 - Accounting Pathway - Pre-Calculus
 - Insurance Pathway - Pre-Calculus
 - Banking Services Pathway - Pre-Calculus



Postsecondary Programs, Degrees, and Colleges

Occupation	Postsecondary Program Name	NM Postsecondary School
Claims Adjusters, Examiners, and Investigators	Certification: Associate in Claims - Management	Certifying Organization: The Institutes
Treasurers and Controllers	Finance, General	New Mexico State University-Main Campus
Financial Analysts	Finance, General	New Mexico State University-Main Campus; University of the Southwest
Financial Managers	Finance, General	New Mexico State University-Main Campus; University of the Southwest
Insurance Sales Agents	Business	New Mexico State University-Main Campus; Central New Mexico Community College
Insurance Claims Clerks	General Office Occupations and Clerical Services	New Mexico State University-Doña Ana; Northern New Mexico College; Clovis Community College; Central New Mexico Community College; University of New Mexico-Valencia County Campus
Loan Officers	Finance, General	New Mexico State University-Main Campus; University of the Southwest
Personal Financial Advisors	Financial Planning and Services	New Mexico State University-Main Campus
Securities, Commodities, and Financial Services Sales Agents	Financial Planning and Services	New Mexico State University-Main Campus
Customer Service Representatives	Certification: Accredited Customer Service Representative	Certifying Organization: The Institutes

Note: The schools listed on this page are a representative sampling of schools that offer the course of studies shown here. Please contact New Mexico colleges directly for more current and relevant offerings.



High School Gets You Ready for College and Career

Common Career Technical Core for the Finance Career Cluster¹:

1. Utilize mathematical concepts, skills and problem solving to obtain necessary information for decision making in the finance industry.
2. Utilize tools, strategies and systems to plan, monitor, manage and maintain the use of financial resources.
3. Plan, staff, lead and organize human resources in finance to enhance employee productivity and job satisfaction.
4. Determine effective tools, techniques and systems to communicate and deliver value to finance customers.
5. Create and maintain positive, ongoing relationships with finance customers.
6. Plan, monitor and manage day-to-day activities to ensure effective and efficient finance operations.
7. Implement safety, health and environmental controls to ensure a safe and productive finance work workplace.
8. Describe and follow laws, regulations and ethical standards that affect finance operations and transactions.
9. Plan, manage and maintain the use of financial resources to protect solvency.
10. Plan, organize and manage a finance organization/department.
11. Plan, monitor and manage day-to-day activities required to sustain continued business functioning.
12. Access, evaluate and disseminate financial information to enhance financial decision making processes.
13. Manage a financial product or service mix in order to respond to market opportunities.
14. Employ financial risk management strategies and techniques used to minimize business loss.

Recommended Program of Study²

	9th Grade	10th Grade	11th Grade	12th Grade
Accounting	0207 Accounting	0210 Advanced Accounting	0212 Cost Accounting	Dual Credit in Accounting - or - 2060 AP Statistics

Other Programs of Study Course Sequences²

	9th Grade	10th Grade	11th Grade	12th Grade
Banking Services	0221 Introductory Business	0228 Personal and Business Finance	0254 Business Ethics	0225 Financial Services
Securities & Investments	0221 Introductory Business	0228 Personal and Business Finance	0225 Financial Services	2060 AP Statistics - or - Dual Credit in Finance
Insurance Services	0221 Introductory Business	0228 Personal and Business Finance	0254 Business Ethics	Dual Credit in Finance - or - 2060 AP Statistics

1. It is expected that a student completing any Programs of Study in this Career Cluster would transition to postsecondary college and career being able to know and do each of these Standards, unless otherwise noted.
2. The PED recommends the Program of Study here based on rigor of the course, quality curriculum and course resources, relevant to State workforce needs, and a capstone class, dual credit course, or AP course and exam.s
3. It is expected that a student completing these Programs of Study would transition to postsecondary prepared for college and career.



Government & Public Administration

Government ensures that citizens have vital services that they might not otherwise be able to access. Government employees provide regulatory oversight and support for transportation, public safety, healthcare, education, utilities, and courts. In New Mexico, most government employees work for state or local governments. However, there are many opportunities for federal government jobs through a major presence of the National Research Laboratories and Department of Defense. Occupations in government mirror careers found in almost every industry. They range from a number of business, management, and administrative occupations to jobs related to construction and transportation.

Public work sector jobs typically require the same educational requirements as private sector occupations. Government employees' work schedules and environments depend on workers' specific jobs and at time on the size and level of government. This cluster includes desk jobs with regular eight hour workdays as well as outdoor work with varying schedules. While hiring practices for most government workers are similar to those in other sectors, some public sector employees are elected or appointed to their jobs.

CAREER RESEARCH

- **Federal Jobs Network**
federaljobs.net/student.htm
- **American Planning Association**
planning.org/join/students
- **National Coordinating Council for Career and Technical Student Organizations**
ctsos.org
- **Junior Achievement**
studentcenter.ja.org/careers/research/government/pages/default.aspx
- **New Mexico State Jobs**
governmentjobs.com/careers/newmexico
- **New Mexico Department of Workforce Solutions**
<https://www.jobs.state.nm.us>

Find more Government & Public Administration occupations at:
onetonline.org/find/career?c=7



Core Skills

- Writing
- Negotiation
- Reading Comprehension
- Speaking
- Management of Financial Resources
- Mathematics
- Management of Personnel Resources
- Systems Analysis
- Social Perceptiveness
- Active Listening



Revenue & Taxation Pathway

Occup.

- **Business & Financial Operations**
Accountants & Auditors; Appraisers & Assessors of Real Estate; Financial Examiners
- **Tax**
Tax Preparers; Tax Examiners & Collectors and Revenue Agents

Governance Pathway

Occupation

- **Architecture & Engineering**
Surveying & Mapping Technicians
- **Arts, Design, Entertainment, Sports & Media**
Public Relations Specialists
- **Education, Training & Library**
Communications Teachers, Postsecondary; Political Science Teachers, Postsecondary
- **Management**
General & Operations Managers; Other Managers; Administrative Services Managers; Chief Executives; Social & Community Service Managers; Transportation, Storage & Distribution Managers; Postmasters & Mail Superintendents



Planning Pathway

Occupation

- **Education, Training & Library**
Political Science Teachers, Postsecondary
- **Life, Physical & Social Science**
Urban & Regional Planners; Economists
- **Management**
Architectural & Engineering Managers
- **Office & Administrative Support**
Interviewers, Except Eligibility & Loan; Statistical Assistants

Public Management & Administration Pathway

Occupation

- **Management**
Other Managers; Social & Community Service Managers; Postmasters & Mail Superintendents
- **Office & Administrative Support**
Postal Service Mail Carriers; Court Municipal & License Clerks; Eligibility Interviewers, Government Programs; Postal Service Mail Sorters, Processors & Processing Machine Operators; Postal Service Clerks

Regulation Pathway

Occupation

- **Business & Financial Operations**
Compliance Officers; Financial Examiners
- **Construction & Extraction**
Construction & Building Inspectors
- **Protective Service**
Detectives & Criminal Investigators
- **Transportation & Material Moving**
Transportation Inspectors

National Security Pathway

Occupation

- **Military Enlisted Tactical Operations & Air/Weapons Specialists & Crew Members**
Air Crew members, Aircraft Launch & Recovery Specialists, Armored Assault Vehicle Crew Members, Artillery & Missile Crew Members, Command and Control Center Specialists, Infantry, Radar & Sonar Technicians, Special Forces
- **Military Officer Special & Tactical Operations Leaders/Managers**
Air Crew Officers, Aircraft Launch & Recovery Officers, Armored Assault Vehicle Officers, Artillery & Missile Officers, Command and Control Center Officers, Infantry Officers, Special Forces Officers
- **First-Line Enlisted Military Supervisor/Managers**
First-Line Supervisors of Air Crew Members, First-Line Supervisors of Weapons Specialists/Crew Members





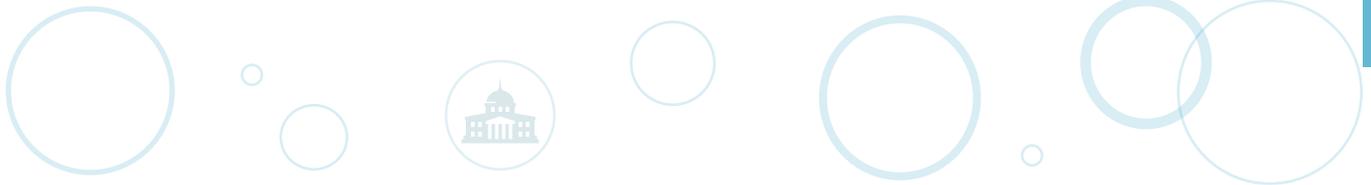
Selected Careers

Occupation ¹	Career Pathway	Job Description
Accountants and Auditor	• Revenue & Taxation	Examine, analyze, and interpret accounting records. Use this information to prepare accurate financial statements, give advice, or audit and evaluate statements prepared by others. Install or advise about systems to record costs or other financial data.
Administrative Services Managers	• Governance	Plan, direct, or coordinate one or more administrative services of an organization. Services may include records and information management, mail distribution, facilities planning and maintenance, custodial operations, or other office support services.
Public Relations Specialists	• Governance	Engage in promoting or creating an intended public image for individuals, groups, or organizations. May write or select material for release to various communications media.
Security Management Specialists	• National Security	Conduct security assessments for organizations, and design security systems and processes. May specialize in areas such as physical security, personnel security, and information security. May work in fields such as health care, banking, gaming, security engineering, or manufacturing.
Construction and Building Inspectors	• Regulation	Inspect structures and to ensure that construction meets local and national building codes, zoning regulations, and contract specifications. Inspections may be general in nature or may be limited to a specific area like electrical systems or plumbing.
Court, Municipal, and License Clerks	• Public Management & Administration	Perform clerical duties for courts, towns, or government licensing agencies and bureaus. to be called and get information for judges and court. Also may prepare documents for town or city council, answer official correspondence, and keep fiscal records and accounts. May issue licenses or permits, record data, administer tests, or collect fees. May prepare docket of cases.
Assessors	• Revenue & Taxation	Appraise real and personal property to determine its fair value. May assess taxes in accordance with prescribed schedules.
Social & Community Service Managers	• Planning	Plan, direct, or coordinate the activities of a social service program or community outreach organization. Oversee the program or organization's budget and policies regarding participant involvement, program requirements, and benefits. Work may involve directing social workers, counselors, or probation officers.
Regulatory Affairs Managers	• Regulation	Plan, direct, or coordinate production activities of an organization to ensure compliance with regulations and standard operating procedures.
Urban and Regional Planners	• Planning	Develop comprehensive plans and programs for the use of land and facilities. These plans help create communities, accommodate population growth, and revitalize physical facilities in towns, cities, counties, and metropolitan areas.

Source: Information about occupations, career pathways, job descriptions, and interests is from O*NET OnLine [onetonline.org](https://www.onetonline.org) data for annual openings, growth, and wages are based on the statewide 2012-2022 Occupational Projections prepared by the New Mexico Department of Workforce Solutions at <https://www.jobs.state.nm.us/vosnet/lmi/default.aspx?pu=1&plang=E>.

Notes:

1. The table lists a sampling of occupations that represent careers in each pathway. For a full list of occupations, go to O*NET OnLine at <http://www.onetonline.org/find/career?c=1>



Annual Average Openings ²	Growth Plus Replacement Needs in NM	NM Entry Annual Wage ³	NM Median Annual Wage ³	Minimum Education ⁴	Interest ⁵
245	Neutral	\$41,620	\$59,170	High	C and E
Confidential	Neutral	\$54,300	\$80,870	Low	E and C
15	Neutral	\$34,320	\$53,750	High	E, A and S
136	Neutral	\$39,180	\$62,700	High	R, I and C
17	Neutral	\$41,170	\$50,810	Middle	R, C and I
7	Neutral	\$27,030	\$31,480	Low	C, E and R
10	Neutral	\$24,790	\$36,240	Middle	C, E and I
45	Neutral	\$43,420	\$64,890	High	E and S
199	Neutral	\$55,100	\$91,520	High	E, C
8	Neutral	\$40,180	\$55,360	High	I, E and A

2. Growth Plus Replacement Needs in NM includes the total number of jobs available due to growth and replacement needs per year.

3. The Occupational Employment Statistics OES program of the Bureau of Labor Statistics produces estimates of wages paid to employees in each occupation. These occupational wage estimates are either mean wages or percentiles. The mean of the first third of the wage distribution is used as a proxy for the entry wage. A percentile wage is a boundary. An occupational median wage (50th percentile) estimate is the boundary between the highest paid 50 percent and the lowest paid 50 percent of workers in that occupation. Half of the workers in each occupation earn more than the median wage, and half the workers earn less than the median wage.

4. Minimum Education Requirements for occupations are determined by the U.S. Bureau of Labor Statistics <http://www.bls.gov>. High Education = Doctoral or Professional Degree, Master's Degree, Bachelor's Degree; Middle Education = Associate's Degree, Postsecondary Certification; Low Education = Some College - No Degree, High School Diploma or Equivalent, Less than High School.

5. There are six interest types Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E), and Conventional (C). Discover your work-related interests on pages 5-8 to find out which types you are most like and the careers that best fit you.



Career Readiness Benchmarks for Government & Public Administration Careers

The combined ACT WorkKeys skills benchmarks indicate that, across education groups, Level 4 is the lowest level of Locating Information and Applied Mathematics skills needed for Government and Public Administration careers. Additionally, all three education groups in the Government career cluster require at least Level 5 for Reading for Information.

Education Group	Applied Mathematics Range (3-7)	Reading for Information Range (3-7)	Locating Information Range (3-6)
SKILL LEVEL REQUIRED FOR 85% OF OCCUPATIONS			
Low Education Occupations	4	5	4
Middle Education Occupations	5	5	4
High Education Occupations	5	6	5

Career Technical Student Organization




Workforce Certifications Government & Public Administration Career Cluster:

Note: Students successfully exiting a course of study in the Government and Public Administration Cluster may be eligible to earn some or all of these certifications.

Precision Exams: Leadership Principles

Precision Exams: Leadership Management A

Precision Exams: Leadership Management B

Recommended Fourth Year of Mathematics Courses

- Governance Pathway - Fundamentals of Statistics
- National Security Pathway - Trigonometry
- Foreign Service Pathway - Fundamentals of Statistics
- Planning Pathway - Fundamentals of Statistics
- Revenue & Taxation Pathway - Fundamentals of Statistics
- Regulation Pathway - Fundamentals of Statistics
- Public Management & Administration Pathway - Fundamentals of Statistics



Postsecondary Programs, Degrees, and Colleges

Occupation	Postsecondary Program Name	NM Postsecondary School	Postsecondary Program Name	NM Postsecondary School
Accountants and Auditors	Accounting	Central New Mexico Community College; Luna Community College; Navajo Technical University; Northern New Mexico College; Eastern New Mexico University-Main Campus		
Administrative Services Managers	Business Administration and Management, General	Luna Community College; Southwestern Indian Polytechnic Institute; Central New Mexico Community College; New Mexico State University-Doña; Western New Mexico University	Business/Commerce, General	New Mexico State University-Doña Ana; Western New Mexico University; New Mexico State University-Main Campus
Public Relations Specialists	Speech Communication and Rhetoric	University of New Mexico-Gallup Campus; Eastern New Mexico University-Main Campus; New Mexico Highlands University; University of New Mexico-Main Campus	Communication, General	Central New Mexico Community College
Security Management Specialists	Certification provided by Cisco Academy in Cisco Cybersecurity Specialist		Certification by National Sheriffs' Association in Basic Court Security Certification	
Construction and Building Inspectors	Building/Home/Construction Inspection/Inspector	Navajo Technical University		
Court, Municipal, and License Clerks	Certificate: NM Municipal Clerks	Certified by: The NM Municipal League		
Assessors	Accounting	Eastern New Mexico University-Ruidoso Campus; Northern New Mexico College; University of New Mexico-Los Alamos Campus; Santa Fe Community College	Taxation	Clovis Community College
Social & Community Service Managers	Public Administration	University of New Mexico-Main Campus; Navajo Technical University; New Mexico Highlands University	Social Work	San Juan College; Mesalands Community College; New Mexico State University-Main Campus; University of New Mexico-Taos Campus; Eastern New Mexico University-Roswell Campus
Regulatory Affairs Managers	Social Sciences, General	Eastern New Mexico University-Main Campus; University of New Mexico-Taos Campus; University of the Southwest; New Mexico Highlands University		
Urban and Regional Planners	City/Urban, Community and Regional Planning	New Mexico State University-Main Campus; University of New Mexico-Main Campus		

Note: The schools listed on this page are a representative sampling of schools that offer the course of studies shown here. Please contact New Mexico colleges directly for more current and relevant offerings.



High School Gets You Ready for College and Career

Common Career Technical Core for the Government & Public Administration Career Cluster¹:

1. Analyze the systemic relationships of government and public administration agencies.
2. Describe health, safety and environmental management systems, as well as policies and procedures, in government and public administration agencies.
3. Describe the implementation of plans and policies to respond to public health, safety and environmental needs in government and public administration agencies.
4. Describe career opportunities and the means to achieve those opportunities in each of the Government and Public Administration Career Pathways.
5. Explain the administration of human, financial, material and information resources in government and public administration agencies.

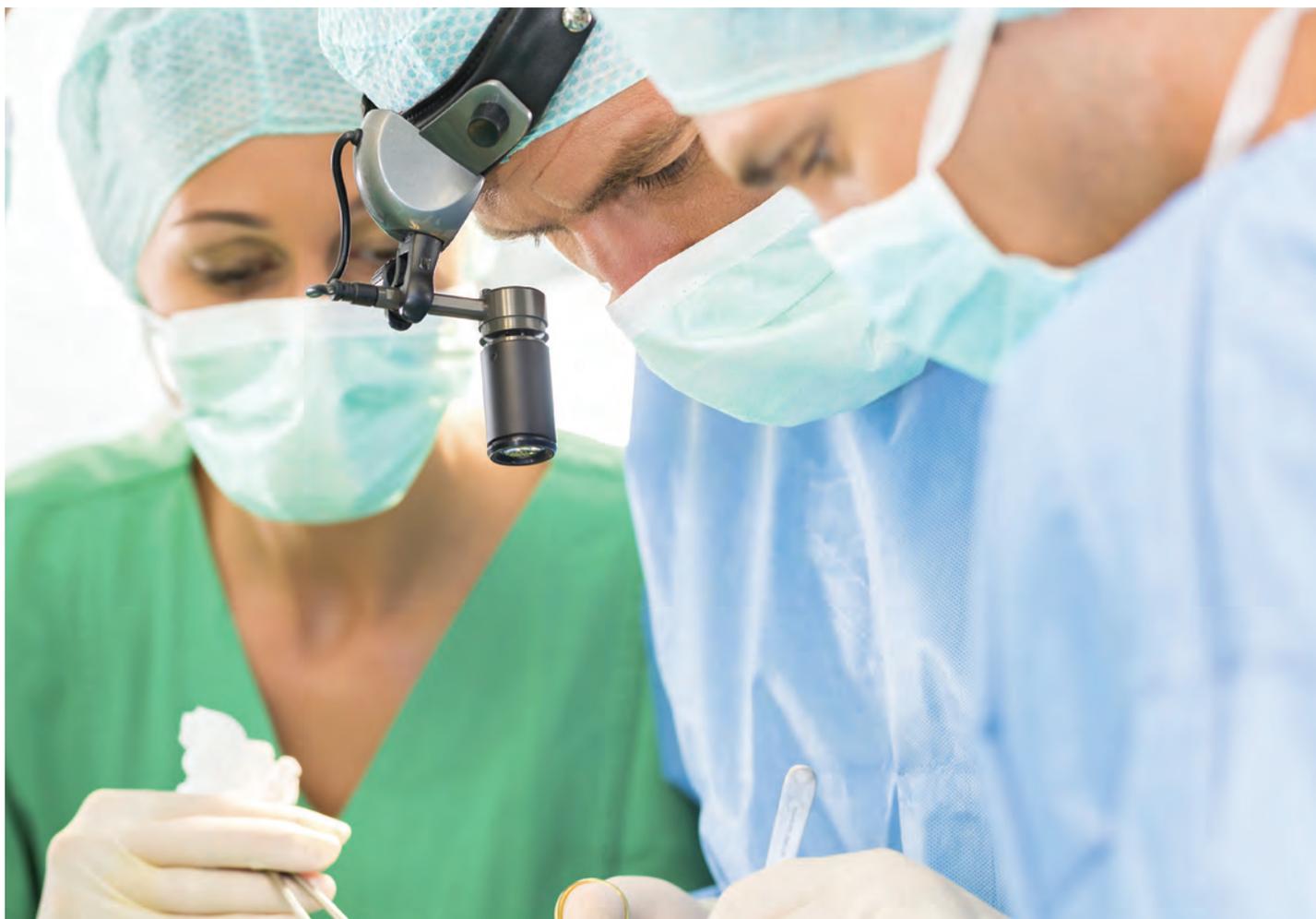
Recommended Programs of Study²

	9th Grade	10th Grade	11th Grade	12th Grade
Public Management & Administration: Tribal Government	0221 Introductory Business	0207 Accounting	2029 Probability and Statistics -OR- 2060 AP Statistics	Dual Credit in Business Management
Revenue & Taxation	2501 Exploration of Public Service Careers	0226 General Business	0207 Accounting	Dual Credit in Business Management -OR- 2060 AP Statistics

Other Programs of Study Course Sequences³

	9th Grade	10th Grade	11th Grade	12th Grade
Foreign Service	2501 Exploration of Public Service Careers	2752 Contemporary World Issues	2504 Public Administration	Dual Credit in Social Sciences -OR- 2737 AP Comparative Govt & Politics
Governance	2501 Exploration of Public Service Careers	0226 General Business	2504 Public Administration	Dual Credit in Social Sciences -OR- 2737 AP Comparative Govt & Politics
National Security	2501 Exploration of Public Service Careers	0226 General Business	2504 Public Administration	Dual Credit in Social Sciences -OR- 2737 AP Comparative Govt & Politics
Planning	2501 Exploration of Public Service Careers	0226 General Business	2504 Public Administration	Dual Credit in Social Sciences -OR- 2737 AP Comparative Govt & Politics
Regulation	2501 Exploration of Public Service Careers	0226 General Business	2504 Public Administration	Dual Credit in Social Sciences -OR- 2737 AP Comparative Govt & Politics

1. It is expected that a student completing any Program of Studies in this Career Cluster would transition to postsecondary college and career being able to know and do each of these Standards, unless otherwise noted.
2. The PED recommends the Program of Study here based on rigor of the course, quality curriculum and course resources, relevant to State workforce needs, and a capstone class, dual credit course, or AP course and exam.
3. It is expected that a student completing these Programs of Study would transition to postsecondary prepared for college and career.



Health Science

Where do medical technologies and human touch intersect? They meet within the Health Science career cluster, which is a New Mexico and national growth industry. As the proportion of Americans over age 65 grows and more people survive serious injuries and other health issues, the need for healthcare has increased. If you want to work in a cluster that has good job growth, this cluster may be for you. It is expected to include the greatest number of new jobs in New Mexico over the next 10 years and about one third of the state's hot jobs.

Hospitals or doctors' offices usually come to mind first when we think about healthcare workplaces, but home health care organizations and nursing homes also employ workers in this cluster. Some employees in this industry have 8 to 5 schedules, while others work less traditional shifts.

If you're thinking about a healthcare career, many jobs require good math and science skills. Jobs in this industry include a wide variety of educational backgrounds, ranging from medical degrees to many jobs that require less than four years of college.

CAREER RESEARCH

- Council on Education for Public Health
ceph.org
- Academy of Nutrition and Dietetics
eatright.org
- Johnson & Johnson/Discovering Nursing
discovernursing.com
- Commission on Accreditation of Allied Health Programs
caahep.org
- Association of University Programs in Health Administration
aupha.org/resourcecenter/futurestudents
- HOSA: Future Health Professionals
hosa.org
- Center for Disease Control and Prevention
jobs.cdc.gov
- New Mexico Public Health Association
<http://www.nmpaha.org/>
- New Mexico Department of Workforce Solutions
<https://www.jobs.state.nm.us>

Find more Health Science occupations at:
onetonline.org/find/career?c=8



Core Skills

- Science
- Service Orientation
- Social Perceptiveness
- Learning Strategies
- Active Learning
- Writing
- Instructing
- Reading Comprehension
- Active Listening
- Monitoring



Support Services Pathway

Occupation

- **Community & Social Service**
Mental Health & Substance Abuse Social Workers
- **Food Preparation & Serving Related**
First Line Supervisors of Food Preparation & Serving Workers;
Cooks, Institution & Cafeteria
- **Healthcare Practitioners & Technicians**
Dietitians, Nutritionists, Clinical Laboratory Technologists and Technicians, Emergency Medical Technicians & Paramedics
- **Production Occupations**
Food Batchmakers

Biotechnology Research & Development Pathway

Occupation

- **Architecture & Engineering**
Biomedical Engineers
- **Computer & Mathematical**
Other Computer Occupations
- **Education, Training & Library**
Health Specialties Teachers, Postsecondary
- **Healthcare Practitioners & Technicians**
Pharmacists
- **Healthcare Support**
Medical Equipment Preparers
- **Life, Physical & Social Science**
Medical Scientists, Except Epidemiologists; Other Biological Scientists
- **Management**
Natural Sciences Managers



Diagnostic Services Pathway

Occupation

- **Education, Training & Library**
Health Specialties Teachers, Postsecondary
- **Healthcare Practitioners & Technicians**
Emergency Medical Technicians & Paramedics; Medical & Clinical Laboratory Technicians; Radiologic Technologists; Physician Assistants; Other Health Technologists & Technicians; Medical & Clinical Laboratory Technologists; Surgical Technologists; Diagnostic Medical Sonographers; Ophthalmic Medical Technicians; Cardiovascular Technologists & Technicians; Other Health Diagnosing & Treating Practitioners; Other Healthcare Practitioners & Technical Workers; Nuclear Medicine Technologists; Radiation Therapists; Athletic Trainers; Respiratory Therapy Technicians
- **Healthcare Support**
Medical Assistants; Other Healthcare Support Workers; Veterinary Assistants & Laboratory Animal Caretakers; Medical Equipment Preparers
- **Life, Physical & Social Science**
Other Physical Scientists
- **Management**
Medical & Health Services Managers
- **Production**
Ophthalmic Laboratory Technicians
- **Transportation & Material Moving**
Ambulance Drivers & Attendants, Except Emergency Medical Technicians

Health Informatics Pathway

Occupation

- **Architecture & Engineering**
Other Engineers
- **Arts, Design, Entertainment, Sports & Media**
Public Relations Specialists; Editors; Fine Artists, Including Painters, Sculptors & Illustrators
- **Business & Financial Operations**
Claims Adjusters, Examiners & Investigators
- **Community & Social Service**
Mental Health Counselors; Rehabilitation Counselors; Substance Abuse & Behavioral Disorder Counselors; Health Educators
- **Computer & Mathematical**
Software Developers, Applications; Computer User Support Specialists; Computer Programmers
- **Education, Training & Library**
Health Specialties Teachers, Postsecondary; Communications Teachers, Postsecondary
- **Healthcare Practitioners & Technicians**
Physical Therapists; Medical Records & Health Information Technicians; Psychiatric Technicians; Occupational Therapists; Occupational Health & Safety Technicians
- **Healthcare Support**
Medical Assistants; Medical Transcriptionists; Psychiatric Aides
- **Management**
Medical & Health Services Managers; Administrative Services Managers
- **Office & Administrative Support**
First-Line Supervisors of Office & Administrative Support Workers; Receptionists & Information Clerks; Executive Secretaries & Executive Administrative Assistants; Billing & Posting Clerks; Medical Secretaries
- **Production**
Dental Laboratory Technicians; Medical Appliance Technicians

Therapeutic Services Pathway

Occupation

- **Community & Social Service**
Social & Human Service Assistants; Other Community & Social Service Specialists; Substance Abuse & Behavioral Disorder Counselors
- **Education, Training & Library**
Health Specialties Teachers, Postsecondary; Art, Drama & Music Teachers, Postsecondary; Nursing Instructors & Teachers, Postsecondary; Psychology Teachers, Postsecondary
- **Healthcare Practitioners & Technicians**
Registered Nurses; Licensed Practical & Licensed Vocational Nurses; Pharmacy Technicians; Other Physicians & Surgeons; Pharmacists; Medical & Clinical Laboratory Technicians; Family & General Practitioners; Dentists, General; Speech-Language Pathologists; Nurse Practitioners; Veterinary Technologists & Technicians; Respiratory Therapists; Veterinarians; Diagnostic Medical Sonographers; Nurse Anesthetists; Surgeons; Opticians, Dispensing; Dietitians & Nutritionists; Internists, General; Other Health Diagnosing & Treating Practitioners; Chiropractors; Optometrists; Other Healthcare Practitioners & Technical Workers; Anesthesiologists; Obstetricians & Gynecologists; Pediatricians, General; Nuclear Medicine Technologists; Radiation Therapists; Audiologists; Athletic Trainers; Psychiatrists; Recreational Therapists; Occupational Health & Safety Technicians; Respiratory Therapy Technicians
- **Healthcare Support**
Nursing Assistants; Medical Assistants; Dental Assistants; Massage Therapists; Other Healthcare Support Workers; Physical Therapist Assistants; Medical Equipment Preparers; Psychiatric Aides; Occupational Therapy Assistants; Physical Therapist Aides; Orderlies
- **Life, Physical & Social Science**
Medical Scientists, Except Epidemiologists; Clinical, Counseling & School Psychologists; Other Life, Physical & Social Science Technicians
- **Management**
Medical & Health Services Managers
- **Office & Administrative Support**
Medical Secretaries
- **Production**
Dental Laboratory Technicians; Ophthalmic Laboratory Technicians



Selected Careers

Occupation ¹	Career Pathway	Job Description
Dental Hygienists	<ul style="list-style-type: none"> Therapeutic Services 	Clean teeth, examine patients for signs of oral diseases such as gingivitis, and provide other preventative dental care. Educate patients on ways to improve and maintain good oral health. May take and develop X-rays or apply fluoride or sealants.
Informatics Nurse Specialists	<ul style="list-style-type: none"> Health Informatics 	Use nursing and informatics knowledge to help design, develop, and continually modify computerized health care systems. May teach staff and help solve problems related to using the system.
Medical and Clinical Laboratory Technologists	<ul style="list-style-type: none"> Diagnostic Services 	Perform complex medical laboratory tests to diagnose, treat, and prevent disease. May train or supervise staff.
Medical and Health Services Managers	<ul style="list-style-type: none"> Diagnostic Services Health Informatics Therapeutic Services 	Plan, direct, or coordinate medical and health services. May manage an entire facility or specialize in managing a specific clinical area or department, or manage a medical practice for a group of physicians.
Physical Therapist	<ul style="list-style-type: none"> Therapeutic Services 	Assess, plan, organize, and participate in rehabilitative programs that improve mobility, relieve pain, increase strength, and improve or correct disabling conditions resulting from disease or injury.
Pharmacists	<ul style="list-style-type: none"> Biotechnology Research & Development Therapeutic Services 	Dispense prescription medicines to patients and provide information on using them safely. May also give advice about how to lead a healthy lifestyle. Other duties may include conducting health and wellness screenings, providing immunizations, and overseeing medications given to patients.
Physician Assistants	<ul style="list-style-type: none"> Diagnostic Services Therapeutic Services 	Practice medicine on a team under the supervision of physicians. Examine patients, diagnose injuries and illnesses, and provide treatment. Prescribe therapy or medication with physician approval.
Radiologic Technicians	<ul style="list-style-type: none"> Diagnostic Services 	Maintain and use equipment and supplies necessary to show portions of the human body on X-ray film or fluoroscopic screen for diagnostic purposes.
Registered Nurses	<ul style="list-style-type: none"> Therapeutic Services 	Provide and coordinate patient care and maintain accurate records. Assess health problems and implement patient care plans. Educate patients and the public about various health conditions.
Home Health Aides	<ul style="list-style-type: none"> Therapeutic Services 	Provide routine individualized healthcare such as changing bandages and dressing wounds, and applying topical medications to the elderly, convalescents, or persons with disabilities at the patient's home or in a care facility. Monitor or report changes in health status.

Source: Information about occupations, career pathways, job descriptions, and interests is from O*NET OnLine onetonline.org data for annual openings, growth, and wages are based on the statewide 2012-2022 Occupational Projections prepared by the New Mexico Department of Workforce Solutions at <https://www.jobs.state.nm.us/vosnet/lmi/default.aspx?pu=1&plang=E>.

Notes:

1. The table lists a sampling of occupations that represent careers in each pathway. For a full list of occupations, go to O*NET OnLine at <http://www.onetonline.org/find/career?c=1>



Annual Average Openings ²	Growth Plus Replacement Needs in NM	NM Entry Annual Wage ³	NM Median Annual Wage ³	Minimum Education ⁴	Interest ⁵
33	Neutral	\$60,860	\$81,420	Middle	S, R and C
33	Growing	\$47,760	\$76,510	High	I, C and R
45	Growing	\$26,850	\$45,040	High	I, R and C
90	Growing	\$67,260	\$99,980	Middle	E, C and S
31	Growing	\$57,070	\$79,780	High	S, I, and R
56	Neutral	\$98,210	\$124,590	High	I, C and S
26	Growing	\$75,640	\$110,060	High	S, I and R
23	Growing	\$34,360	\$57,600	Middle	R and I
661	Growing	\$53,210	\$69,570	Middle	S, I and C
347	Growing	\$18,020	\$22,070	Low	S and R

- Growth Plus Replacement Needs in NM includes the total number of jobs available due to growth and replacement needs per year.
- The Occupational Employment Statistics OES program of the Bureau of Labor Statistics produces estimates of wages paid to employees in each occupation. These occupational wage estimates are either mean wages or percentiles. The mean of the first third of the wage distribution is used as a proxy for the entry wage. A percentile wage is a boundary. An occupational median wage (50th percentile) estimate is the boundary between the highest paid 50 percent and the lowest paid 50 percent of workers in that occupation. Half of the workers in each occupation earn more than the median wage, and half the workers earn less than the median wage.
- Minimum Education Requirements for occupations are determined by the U.S. Bureau of Labor Statistics <http://www.bls.gov>. High Education = Doctoral or Professional Degree, Master's Degree, Bachelor's Degree; Middle Education = Associate's Degree, Postsecondary Certification; Low Education = Some College - No Degree, High School Diploma or Equivalent, Less than High School.
- There are six interest types Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E), and Conventional (C). Discover your work-related interests on pages 5-8 to find out which types you are most like and the careers that best fit you.



Career Readiness Benchmarks for Health Science Careers

The combined ACT WorkKeys skills benchmarks indicate that, across education groups, Level 4 is the lowest level of Locating Information and Applied Mathematics skills needed for the Health Care career cluster. Additionally, all three education groups in the Health Care career cluster require at least Level 5 for Reading for Information.

Education Group	Applied Mathematics Range (3-7)	Reading for Information Range (3-7)	Locating Information Range (3-6)
SKILL LEVEL REQUIRED FOR 85% OF OCCUPATIONS			
Low Education Occupations	4	5	4
Middle Education Occupations	5	5	5
High Education Occupations	5	5	5



Workforce Certifications for the Health Science Career Cluster:

Note: Students successfully exiting a course of study in the Health Science Cluster may be eligible to earn some or all of these certifications.

- Heart Saver CPR
- Basic Life Support CPR Certification
- National Health Care Foundation Skill Standards
- State Certification in Certified Nursing Assistant
- Precisions Exams Certification: Biotechnology, Health Sciences Introductions
- BLS AED CPR for Medical Professionals
- State Certification in Emergency Medical Technology
- NCLEX PN — National Council for Licensure Exam for Practical Nursing
- Health Care Professionals First Aid CPR
- Health Care Professionals First Aid CPR
- Certified Medical Technician (CMT)
- Certified Medical Assistant (CMA)
- Dental Assistant
- Dental Radiography (RHA)
- Pharmacy Technician (CPhT)
- Licensed Vocational Nurse (LVN)
- National Health Care Foundation Skill Standards
- Phlebotomy Technician (CPT)

Recommended Fourth Year of Mathematics Courses

- Therapeutic Services Pathway - Pre-Calculus
- Diagnostic Services Pathway - Pre-Calculus
- Health Informatics Pathway - Statistics
- Support Services Pathway - Pre-Calculus
- Biotechnology Research & Development Pathway - Trigonometry



Postsecondary Programs, Degrees, and Colleges

Occupation	Postsecondary Program Name	NM Postsecondary School	Postsecondary Program Name	NM Postsecondary School
Dental Hygienists	Dental Hygiene/ Hygienist	University of New Mexico-Main Campus; Eastern New Mexico University-Roswell Campus; San Juan College; New Mexico State University-Doña Ana		
Informatics Nurse Specialists	Computer and Information Sciences, General	University of New Mexico-Taos Campus; Eastern New Mexico University-Ruidoso Campus; Central New Mexico Community College	Information Technology	Navajo Technical University; New Mexico Institute of Mining and Technology; New Mexico State University-Alamogordo; Northern New Mexico College
Medical and Clinical Laboratory Technologists	Clinical Laboratory Science/Medical Technology/ Technologist	Western New Mexico University; University of New Mexico-Main Campus		
Medical and Health Services Managers	Public Health, General	New Mexico State University-Doña Ana	Health Information/ Medical Records Administration/ Administrator	Central New Mexico Community College
Physical Therapist	Physical Therapy/ Therapist	University of New Mexico-Main Campus		
Pharmacists	Pharmaceutics and Drug Design	University of New Mexico-Main Campus		
Physician Assistants	Physician Assistant	University of New Mexico-Main Campus		
Radiologic Technicians	Radiologist Assistant	Clovis Community College		
Registered Nurses	Registered Nursing/ Registered Nurse	Santa Fe Community College; New Mexico State University-Doña Ana; New Mexico Junior College; Central New Mexico Community College; San Juan College		
Home Health Aides	Home Health Aide/ Home Attendant	University of New Mexico-Valencia County Campus; Central New Mexico Community College; Eastern New Mexico University-Roswell; Santa Fe Community College		

Note: The schools listed on this page are a representative sampling of schools that offer the course of studies shown here. Please contact New Mexico colleges directly for more current and relevant offerings.



High School Gets You Ready for College and Career

Common Career Technical Core for the Health Science Career Cluster¹:

1. Determine academic subject matter, in addition to high school graduation requirements, necessary for pursuing a health science career.
2. Explain the healthcare worker's role within their department, their organization, and the overall healthcare system.
3. Identify existing and potential hazards to clients, coworkers, visitors and self in the healthcare workplace.
4. Evaluate the roles and responsibilities of individual members as part of the healthcare team and explain their role in promoting the delivery of quality health care.
5. Analyze the legal and ethical responsibilities, limitations and implications of actions within the healthcare workplace.
6. Evaluate accepted ethical practices with respect to cultural, social and ethnic differences within the healthcare workplace.

Recommended Programs of Study²

	9th Grade	10th Grade	11th Grade	12th Grade
Health Informatics: SREB Advanced Careers	1560 Data and Use	1561 Transforming Data into Information	1562 Transforming Information into Knowledge	1563 Problems and Solutions
Diagnostic Services: Project Lead the Way Biomedical Science	1660 PLTW Principles of Biomedical Sciences	1661 Human Body Systems	1662 Medical Interventions -OR- 1550 Medical Anatomy & Phisi	1664 Biomedical Innovations

Other Programs of Study Course Sequences³

	9th Grade	10th Grade	11th Grade	12th Grade
Biotechnology Research & Development	1501 Health Care Occupations Career Exploration	1595 Health Care Sciences	1550 Medical Anatomy & Physiology	1627 Research and Development
Support Services: Family and Community Services & Social Workers	0550 Child and Human Development	1501 Health Care Occupations Career Exploration	2501 Exploration of Public Service Careers	2773 AP Psychology - or - Dual Credit in Social Services
Therapeutic Services	1501 Health Care Occupations Career Exploration	1502 Health Care Occupations	1550 Medical Anatomy & Physiology	Dual Credit Course in Health and Wellness

1. It is expected that a student completing any Programs of Study in this Career Cluster would transition to postsecondary college and career being able to know and do each of these Standards, unless otherwise noted.
2. The PED recommends the Program of Study here based on rigor of the course, quality curriculum and course resources, relevant to State workforce needs, and a capstone class, dual credit course, or AP course and exam.
3. It is expected that a student completing these Programs of Study would transition to postsecondary prepared for college and career.



Hospitality & Tourism

When you pick up takeout food, eat in a restaurant or cafeteria, and enjoy food at catered events, you're helping support the hospitality industry. If you travel and stay in a hotel, bed-and-breakfast, or RV park, the tourism industry benefits. Going to baseball games, casinos, and museums are other activities that contribute to this industry's part of the economy.

As in most clusters, technology has changed how people work and serve customers. Some restaurants have recently decided to give customers tablets to use for ordering and paying for meals and for playing games while waiting to be served. Computer systems allow managers to track inventory and to set up worker schedules.

Hospitality and tourism occupations include many entry level positions. Although some management jobs require postsecondary education, a high school diploma is sufficient for a number of occupations. The work environment for these occupations varies according to job function. Kitchen employees work in hot, noisy surroundings while event planners may spend much of their time in an office. Tourism workers often have schedules that depend on their locations and on special events and seasons. Industries that tend to employ the highest number of hospitality and tourism workers include full-service and fast-food restaurants, hotels and motels, janitorial companies, and public schools.

CAREER RESEARCH

- **Destination Marketing Association International**
destinationmarketing.org
- **National Restaurant Association Educational Foundation**
nraef.org/Students
- **New Mexico Restaurant Association**
nmrestaurants.org
- **IDEA Health & Fitness Association**
ideafit.com/fitness-career
- **International Association of Amusement Parks and Attractions**
ialei.org
- **Family, Career and Community Leaders of America (FCCLA)**
fccla.com
- **New Mexico Hospitality Association**
newmexicohospitality.org
- **National Coordinating Council for Career and Technical Student Organizations**
<http://www.ctsos.org>
- **New Mexico Department of Workforce Solutions**
<https://www.jobs.state.nm.us>

Find more Hospitality & Tourism occupations at
oneline.org/find/career?c=9



Core Skills

- Service Orientation
- Social Perceptiveness
- Coordination
- Management of Financial Resources
- Management of Personal Resources
- Negotiation
- Management of Material Resources
- Persuasion
- Monitoring
- Speaking



Travel & Tourism Pathway

Occupation

- Business & Financial Operations
Meeting, Convention, & Event Planners
- Management
Other Managers; Food Service Managers; Lodging Managers
- Office & Administrative Support
Reservation & Transportation Ticket Agents & Travel Clerks
- Personal Care & Service
Tour Guides; Travel Agents; Interpreters & Translators



Lodging Pathway

Occupation

- **Building & Grounds Cleaning & Maintenance**
Janitors & Cleaners, Except Maids & Housekeeping Cleaners; First-Line Supervisors of Housekeeping & Janitorial Workers
- **Management**
Food Services Managers; Lodging Managers
- **Personal Care & Service**
Residential Advisors; Concierges; Baggage Porters & Bellhops; Switchboard Operators; Ushers; Lobby Attendants & Ticket Takers

Recreation, Amusements & Attractions Pathway

Occupation

- **Arts, Design, Entertainment, Sports & Media**
Athletes & Sports Competitors; Umpires, Referees & Other Sports Officials; Set & Exhibit Designers; Motion Picture Projectionists
- **Education, Training & Library**
Self-Enrichment Education Teachers; Museum Technicians & Conservators
- **Management**
Lodging Managers; Natural Sciences Managers; Gaming Managers
- **Personal Care & Service**
Recreation Workers; Animal Trainers

Restaurants & Food/Beverage Services Pathway

Occupation

- **Food Preparation & Serving Related**
First-Line Supervisors of Food Preparation & Serving Workers; Cooks, Restaurant; Cooks, Institution & Cafeteria; Chefs & Head Cooks; Bakers
- **Management**
Food Service Managers; First-Line Supervisors of Food Preparation & Serving Workers
- **Production**
Slaughterers & Meat Packers; Meat, Poultry & Fish Cutters & Trimmers; Bakers; Butchers & Meat Cutters; Separating, Filtering, Clarifying, Precipitating & Still Machine Setters, Operators & Tenders





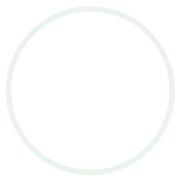
Selected Careers

Occupation ¹	Career Pathway	Job Description
Chefs and Head Cooks	<ul style="list-style-type: none"> Restaurants & Food/ Beverage Services 	Oversee food preparation at restaurants and other places where food is served. Direct kitchen staff and handle any food-related concerns. May and cooking food. Also, may plan and price menu items, order supplies, and keep records and accounts.
First-Line Supervisors of Food Preparation and Serving Workers	<ul style="list-style-type: none"> Restaurants & Food/ Beverage Services 	Directly supervise and coordinate activities of food service workers.
First-Line Supervisors of Housekeeping and Janitorial Workers	<ul style="list-style-type: none"> Lodging 	Directly supervise and coordinate work activities of cleaning staff in hotels, hospitals, offices, and other establishments.
Food Service Managers	<ul style="list-style-type: none"> Lodging Restaurants & Food/ Beverage Services Travel & Tourism 	Oversee staff, plan, and coordinate activities in restaurants and other establishments that prepare and serve food and beverages. Ensure that customers are satisfied and that the business is profitable.
Hotel, Motel, and Resort Desk Clerks	<ul style="list-style-type: none"> Lodging 	Assist hotel, motel, and resort guests. Register and assign rooms to guests and provide keys or cards. Give and receive messages and keep records of occupied rooms and guests' accounts. Make and confirm reservations. Give statements to and collect payments from departing guests.
Lodging Managers	<ul style="list-style-type: none"> Lodging Restaurants & Food/ Beverage Services Travel & Tourism 	Oversee staff, plan, and coordinate activities in a hotel, motel, or other type of lodging facility. Ensure that customers have a pleasant experience and that the business is profitable and efficient.
Interpreters and Translators	<ul style="list-style-type: none"> Travel & Tourism 	Interpret oral or sign language, or translate written text from one language into another.
Recreation Workers	<ul style="list-style-type: none"> Recreation, Amusements & Attractions 	Design and lead recreation activities for groups in public, private, or volunteer agencies or recreation facilities. Organize and promote activities like arts and crafts, sports, games, music, dramatics, social recreation, and camping.
Residential Advisors	<ul style="list-style-type: none"> Lodging 	Coordinate activities in dormitories, group homes, or similar organizations. Order supplies and determine need for maintenance, repairs, and furnishings. May maintain household records and assign rooms. May assist residents with problem-solving or refer them to counseling resources.
Self-Enrichment Education Teachers	<ul style="list-style-type: none"> Recreation, Amusements & Attractions 	Teach or instruct courses that don't usually lead to an occupation or degree. Courses may include self-improvement, non-vocational, and nonacademic subjects. Teaching may take place in a classroom or elsewhere.

Source: Information about occupations, career pathways, job descriptions, and interests is from O*NET OnLine [onetonline.org](http://www.onetonline.org) data for annual openings, growth, and wages are based on the statewide 2012-2022 Occupational Projections prepared by the New Mexico Department of Workforce Solutions at <https://www.jobs.state.nm.us/vosnet/lmi/default.aspx?pu=1&plang=E>.

Notes:

1. The table lists a sampling of occupations that represent careers in each pathway. For a full list of occupations, go to O*NET OnLine at <http://www.onetonline.org/find/career?c=1>



Annual Average Openings ²	Growth Plus Replacement Needs in NM	NM Entry Annual Wage ³	NM Median Annual Wage ³	Minimum Education ⁴	Interest ⁵
21	Growing	\$24,980	\$39,970	Middle	E, R and A
308	Growing	\$20,740	\$25,280	Low	E, C and R
38	Neutral	\$26,040	\$35,240	Low	E, C and R
20	Neutral	\$34,310	\$49,270	Low	E, C and R
179	Growing	\$17,980	\$21,220	Low	C, E and S
7	Neutral	\$29,600	\$50,850	Middle	E, C and S
22	Growing	\$38,530	\$54,160	High	A and S
62	Neutral	\$17,920	\$20,000	High	S, E and A
21	Growing	\$21,980	\$27,350	Low	S, E and C
27	Growing	\$20,620	\$28,230	low	S, A and E

2. Growth Plus Replacement Needs in NM includes the total number of jobs available due to growth and replacement needs per year.

3. The Occupational Employment Statistics OES program of the Bureau of Labor Statistics produces estimates of wages paid to employees in each occupation. These occupational wage estimates are either mean wages or percentiles. The mean of the first third of the wage distribution is used as a proxy for the entry wage. A percentile wage is a boundary. An occupational median wage (50th percentile) estimate is the boundary between the highest paid 50 percent and the lowest paid 50 percent of workers in that occupation. Half of the workers in each occupation earn more than the median wage, and half the workers earn less than the median wage.

4. Minimum Education Requirements for occupations are determined by the U.S. Bureau of Labor Statistics <http://www.bls.gov>. High Education = Doctoral or Professional Degree, Master's Degree, Bachelor's Degree; Middle Education = Associate's Degree, Postsecondary Certification; Low Education = Some College - No Degree, High School Diploma or Equivalent, Less than High School.

5. There are six interest types Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E), and Conventional (C). Discover your work-related interests on pages 5-8 to find out which types you are most like and the careers that best fit you.



Career Readiness Benchmarks for Hospitality & Tourism Administration Careers

The combined ACT WorkKeys skills benchmarks indicate that, for the low education group, Level 4 is the lowest level of Locating Information, Applied Mathematics, and Reading for Information skills needed for Hospitality and Tourism careers. The scores shown for the middle education group is the average for the three careers listed for that category on p83.

Education Group	Applied Mathematics Range (3-7)	Reading for Information Range (3-7)	Locating Information Range (3-6)
SKILL LEVEL REQUIRED FOR 85% OF OCCUPATIONS			
Low Education Occupations	4	4	4
Middle Education Occupations	3	3	4
High Education Occupations	5	6	5

Career Technical Student Organization

Workforce Certifications:

Note: Students successfully exiting a course of study in the Hospitality and Tourism Cluster may be eligible to earn some or all of these certifications.

National Restaurant Association Certifications:

1. ServSafe Food Handlers
2. ServSafe Manager

Lodging Management Passport

1. Lodging Management Program Certification I
2. Lodging Management Program Certification II

National Restaurant Association Education Foundation:

1. Customer Service
2. Food Service Accounting
3. Manage First

National Restaurant Association Certifications:

1. ProStart I
2. ProStart II

NOCTI Certification:

1. Culinary Arts Level 1 Prep Cook
2. Culinary Arts Level 2 Cook

Recommended Fourth Year of Mathematics Courses

- Restaurants & Food/ Beverage Services Pathway - Statistics
- Lodging Pathway – Statistics
- Travel & Tourism Pathway - Statistics
- Recreation, Amusements & Attractions Pathway - Statistics



Postsecondary Programs, Degrees, and Colleges

Occupation	Postsecondary Program Name	NM Postsecondary School	Postsecondary Program Name	NM Postsecondary School
Chefs and Head Cooks	Culinary Arts/Chef Training	University of New Mexico-Taos Campus; Eastern New Mexico University-Main Campus; Central New Mexico Community College; Eastern New Mexico University-Ruidoso Campus	Baking and Pastry Arts/Baker/Pastry Chef	Navajo Technical University; Central New Mexico Community College
First-Line Supervisors of Food Preparation and Serving Workers	Foodservice Systems Administration/Management	Central New Mexico Community College	Restaurant, Culinary, and Catering Management/Manager	Eastern New Mexico University-Ruidoso Campus
First-Line Supervisors of Housekeeping and Janitorial Workers	Building/Property Maintenance	New Mexico State University-Doña Ana; Eastern New Mexico University-Roswell Campus; Santa Fe Community College; Navajo Technical University		
Food Service Managers	Foodservice Systems Administration/Management	Central New Mexico Community College	Hotel/Motel Administration/Management	Eastern New Mexico University-Ruidoso Campus; Santa Fe Community College
Hotel, Motel, and Resort Desk Clerks	Certified Front Desk Representative	Certified by: American Hotel and Lodging Association Educational Institute		
Lodging Managers	Hotel, Motel, and Restaurant Management	Eastern New Mexico University-Ruidoso Campus	Hospitality Administration/Management, General	Central New Mexico Community College; New Mexico State University-Doña Ana
Interpreters and Translators	Spanish Language and Literature	Eastern New Mexico University-Main Campus; Central New Mexico Community College; New Mexico State University-Main Campus; Santa Fe Community College	Sign Language Interpretation and Translation	University of New Mexico-Main Campus; Santa Fe Community College
Recreation Workers	Parks, Recreation and Leisure Studies	Eastern New Mexico University-Roswell Campus; New Mexico Highlands University; San Juan College; Santa Fe Community College		
Residential Advisors	Certified Front Desk Representative	Certified by: American Hotel and Lodging Association Educational Institute		
Self-Enrichment Education Teachers	Health and Physical Education/Fitness, General	Santa Fe Community College; Western New Mexico University; Clovis Community College; San Juan College	Sport and Fitness Administration/Management	Luna Community College

Note: The schools listed on this page are a representative sampling of schools that offer the course of studies shown here. Please contact New Mexico colleges directly for more current and relevant offerings.



High School Gets You Ready for College and Career

Common Career Technical Core for the Hospitality & Tourism Administration Career Cluster¹:

1. Describe the key components of marketing and promoting hospitality and tourism products and services.
2. Evaluate the nature and scope of the Hospitality and Tourism Career Cluster and the role of hospitality and tourism in society and the economy.
3. Demonstrate hospitality and tourism customer service skills that meet customers' needs.
4. Describe employee rights and responsibilities and employers' obligations concerning occupational health and safety in the hospitality and tourism workplace.
5. Identify potential, real and perceived hazards and emergency situations and determine the appropriate safety and security measures in the hospitality and tourism workplace.
6. Describe career opportunities and means to attain those opportunities in each of the Hospitality and Tourism Career Pathways.

Recommended Programs of Study²

	9th Grade	10th Grade	11th Grade	12th Grade
Restaurants & Food/ Beverage Services	0504 Nutrition	0532 ProStart I	0533 ProStart II	Dual Credit in Culinary Arts -OR- 0539 ProStart Internship
Travel & Tourism	0540 Introduction to Hospitality and Tourism	1814 Retail Marketing	0261 Hospitality & Tourism	Dual Credit in Business Management

Other Programs of Study Course Sequences³

	9th Grade	10th Grade	11th Grade	12th Grade
Lodging	0540 Introduction to Hospitality and Tourism	0534 Lodging Management I	0535 Lodging Management II	Dual Credit in Business Management
Recreation, Amusements and Attractions	0540 Introduction to Hospitality and Tourism	1814 Retail Marketing	0261 Hospitality & Tourism	Dual Credit in Business Management

1. It is expected that a student completing any Programs of Study in this Career Cluster would transition to postsecondary college and career being able to know and do each of these Standards, unless otherwise noted.
2. The PED recommends the Program of Study here based on rigor of the course, quality curriculum and course resources, relevant to State workforce needs, and a capstone class, dual credit course, or AP course and exam.
3. It is expected that a student completing these Programs of Study would transition to postsecondary prepared for college and career.



Human Services

From customer service representatives to mental health counselors to hairdressers, human services workers provide a wide range of assistance to individuals and families. People who choose to work in this cluster usually have a deep desire to enrich and make life easier for others. The Personal Care & Service and Community & Social Services industries show the largest projected job growth rate in New Mexico over the next 10 years, and is among the top 10 for total numbers of new jobs during that time.

What kinds of services do human services customers need? They may benefit from rehabilitation therapy psychological assistance help with daily activities such as meal preparation or housekeeping, spiritual guidance or health education. Their needs have an impact on where workers provide services. Psychologists and Social and Community Service Managers are likely to work in office settings. Others, like clergy and social workers, may work part of the time in an office and also visit people at home.

Since the services provided in this industry vary greatly, workers in this cluster have educational backgrounds that range from high school diplomas to doctorates. They may also need credentials such as certifications and licenses. Day care centers, fitness and sports centers, social assistance organizations and local and state government tend to offer more human services jobs than other work settings.

CAREER RESEARCH

- **National Association of Social Workers**
socialworkers.org
- **National Association for Family Child Care**
nafcc.org
- **Association for Early Learning Leaders**
earlylearningleaders.org
- **Associated Bodywork & Massage Professionals**
abmp.com
- **Association for Talent Development (ATD)**
td.org
- **US Department of Health and Human Services**
hhs.gov/careers/index.html
- **National Coordinating Council for Career and Technical Student Organizations**
<http://www.ctsos.org>
- **New Mexico Department of Workforce Solutions**
<https://www.jobs.state.nm.us>

Find more Human Services occupations at
onetonline.org/find/career?c=10



Core Skills

- Service Orientation
- Social Perceptiveness
- Instructing
- Learning Strategies
- Operations Analysis
- Persuasion
- Speaking
- Negotiation
- Writing
- Active Listening



Early Childhood Development & Services Pathway

Occup.

- Education, Training & Library
Preschool Teachers, Except Special Education

Consumer Services Pathway

Occupation

- Arts, Design, Entertainment, Sports & Media
Public Relations Specialists; Writers & Authors; Technical Writers
- Management
Sales Managers; Marketing Managers; Property, Real Estate & Community Association Managers
- Office & Administrative Support
Customer Service Reps
- Sales & Related
First-Line Supervisors of Retail Sales Workers



Counseling & Mental Health Services Pathway

Occupation

- **Arts, Design, Entertainment, Sports & Media**
Music Directors & Composers
- **Community & Social Service**
Clergy; Other Religious Workers; Directors, Religious Activities & Education; Mental Health Counselors; Mental Health & Substance Abuse Social Workers; Rehabilitation Counselors; Healthcare Social Workers; Substance Abuse & Behavioral Disorder Counselors; Health Educators
- **Education, Training & Library**
Mathematical Science Teachers, Postsecondary; Psychology Teachers, Postsecondary; Philosophy & Religion Teachers, Postsecondary; Social Work Teachers, Postsecondary
- **Healthcare Practitioners & Technicians**
Other Physicians & Surgeons
- **Life, Physical, & Social Science**
Clinical, Counseling & School Psychologists
- **Management**
Social & Community Service Managers; Natural Science Managers
- **Personal Care & Service**
Recreation Workers

Family & Community Services Pathway

Occupation

- **Community & Social Service**
Clergy; Child, Family & School Social Workers; Social & Human Service Assistants; Directors, Religious Activities & Education; Healthcare Social Workers; Probation Officers & Correctional Treatment Specialists; Other Social Workers
- **Education, Training & Library**
Social Work Teachers, Postsecondary
- **Life, Physical & Social Science**
Social Science Research Assistants; Other Social Scientists & Related Workers
- **Management**
Other Managers; Chief Executives; Social & Community Service Managers
- **Office & Administrative Support**
Eligibility Interviewers, Government Programs
- **Personal Care & Service**
Residential Advisors
- **Protective Service**
Other Protective Service Workers

Personal Care Services Pathway

Occupation

- **Healthcare Support**
Massage Therapists
- **Personal Care & Service**
Hairdressers, Hairstylists & Cosmetologists; First-Line Supervisors of Personal Service Workers; Fitness Trainers & Aerobics Instructors; Funeral Attendants; Barbers; Morticians, Undertakers & Funeral Directors; Skincare Specialists
- **Production**
Tailors, Dressmakers & Custom Sewers



Selected Careers

Occupation ¹	Career Pathway	Job Description
Child, Family, and School Social Workers	<ul style="list-style-type: none"> Family & Community Services 	Help children and their families solve and cope with problems by providing social services and assistance. Address problems like teenage pregnancy, misbehavior, and truancy in schools. May focus on ways to improve children's school performance and may also advise teachers.
Childcare Workers	<ul style="list-style-type: none"> Early Childhood Development & Services Family & Community Services 	Take care of children at schools, businesses, private households, and childcare institutions. Perform a variety of tasks for children, like dressing, feeding, bathing, and overseeing play. May help children prepare for kindergarten or help older children with homework.
Healthcare Social Workers	<ul style="list-style-type: none"> Counseling & Mental Health Services Family & Community Services 	Give psychological and social support to individuals, families, and groups coping with chronic, acute, or terminal illnesses. May advise family caregivers, provide patient education and counseling, and make referrals for other services. May also provide care and case management or take actions to promote health, prevent disease, and help clients access healthcare.
Massage Therapists	<ul style="list-style-type: none"> Personal Care Services 	Perform therapeutic massages of soft tissues and joints. Relieve pain and stress, improve circulation, and aid in clients' general wellness. May help assess range of motion and muscle strength or propose client therapy plans.
Mental Health Counselors	<ul style="list-style-type: none"> Counseling & Mental Health Services 	Help people manage and overcome mental and emotional disorders as well as problems with their family and relationships. Listen to clients and ask questions to help them understand their problems and develop strategies to improve their lives. May help individuals deal with issues like addictions and managing stress.
Mental Health and Substance Abuse Social Workers	<ul style="list-style-type: none"> Counseling & Mental Health Services 	Assess and treat individuals who have mental, emotional, or substance abuse problems, including alcohol, tobacco and/or drug abuse. Activities may include individual and group therapy, crisis intervention, case management, client advocacy, prevention, and education.
Rehabilitation Counselors	<ul style="list-style-type: none"> Counseling & Mental Health Services 	Help people with emotional and physical disabilities live independently. Coordinate activities for residents of care and treatment facilities. Assess client needs. Design and carry out rehabilitation programs that may include personal and career counseling, training, and job placement.
Preschool Teachers	<ul style="list-style-type: none"> Early Childhood Development & Services 	Instruct preschool-aged children in activities designed to promote social, physical, and intellectual growth needed for primary school in preschool, day care center, or other child development facility. May be required to hold State certification.
Social and Human Service Assistants	<ul style="list-style-type: none"> Family & Community Services 	Provide client services that help people get through difficult times or get extra support. May help clients find appropriate social and community services and benefits. May also help social workers develop, organize, and conduct programs to prevent or deal with substance abuse, relationships, or dependent care.
Fitness Trainers and Aerobics Instructors	<ul style="list-style-type: none"> Family & Community Services 	Instruct or coach groups or individuals in exercise activities. Demonstrate techniques and form, observe participants, and explain to them corrective measures necessary to improve their skills.

Source: Information about occupations, career pathways, job descriptions, and interests is from O*NET OnLine ononline.org data for annual openings, growth, and wages are based on the statewide 2012-2022 Occupational Projections prepared by the New Mexico Department of Workforce Solutions at <https://www.jobs.state.nm.us/vosnet/lmi/default.aspx?pu=1&plang=E>.

Notes:

1. The table lists a sampling of occupations that represent careers in each pathway. For a full list of occupations, go to O*NET OnLine at <http://www.ononline.org/find/career?c=1>



Total Avg. Annual Opening ²	NM Annualized Growth Rate ³	NM Entry Annual Wage ⁴	NM Median Annual Wage ⁴	Minimum Education ⁵	Interest ⁶
64	Neutral	\$26,820	\$38,790	Middle	S and E
236	Growing	\$17,700	\$20,080	Low	S and A
54	Growing	\$40,780	\$54,420	High	S and I
28	Growing	\$28,470	\$42,880	Low	S and R
43	Growing	\$25,220	\$46,190	High	S, I and A
36	Growing	\$23,990	\$39,640	High	S, I and A
22	Growing	\$21,970	\$37,440	High	S and I
94	Growing	\$20,500	\$26,820	Middle	S and A
93	Neutral	\$24,470	\$32,810	Low	C, S and E
42	Neutral	\$23,240	\$37,910	High	S, R and E

2. Growth Plus Replacement Needs in NM includes the total number of jobs available due to growth and replacement needs per year.

3. The Occupational Employment Statistics OES program of the Bureau of Labor Statistics produces estimates of wages paid to employees in each occupation. These occupational wage estimates are either mean wages or percentiles. The mean of the first third of the wage distribution is used as a proxy for the entry wage. A percentile wage is a boundary. An occupational median wage (50th percentile) estimate is the boundary between the highest paid 50 percent and the lowest paid 50 percent of workers in that occupation. Half of the workers in each occupation earn more than the median wage, and half the workers earn less than the median wage.

4. Minimum Education Requirements for occupations are determined by the U.S. Bureau of Labor Statistics <http://www.bls.gov>. High Education = Doctoral or Professional Degree, Master's Degree, Bachelor's Degree; Middle Education = Associate's Degree, Postsecondary Certification; Low Education = Some College - No Degree, High School Diploma or Equivalent, Less than High School.

5. There are six interest types Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E), and Conventional (C). Discover your work-related interests on pages 5-8 to find out which types you are most like and the careers that best fit you.

Career Readiness Benchmarks for Human Services Careers

The average combined ACT WorkKeys skills benchmarks below are taken from the careers presented on the previous pages for this Cluster. They indicate that, for the low and middle education group, Level 4 is the lowest level of Locating Information, and Reading for Information skills needed for Human Services careers.

Education Group	Applied Mathematics Range (3-7)	Reading for Information Range (3-7)	Locating Information Range (3-6)
SKILL LEVEL REQUIRED FOR 85% OF OCCUPATIONS			
Low Education Occupations	3	4	4
Middle Education Occupations	3	4	4
High Education Occupations	3	3	3



Workforce Certifications:
<i>Note: Students successfully exiting a course of study in the Human Services Cluster may be eligible to earn some or all of these certifications.</i>
NM Child Development Association Certification
Cosmetology License
Mental Health First Aid Adult
Mental Health First Aid Youth
Certified Personal Trainer

- ### Recommended Fourth Year of Mathematics Courses
- Early Childhood Development & Services Pathway - Trigonometry or Statistics
 - Counseling & Mental Health Services Pathway - Trigonometry or Statistics
 - Family & Community Services Pathway - Trigonometry or Statistics
 - Personal Care Services Pathway - Statistics
 - Consumer Services Pathway - Statistics



Postsecondary Programs, Degrees, and Colleges

Occupation	Postsecondary Program Name	NM Postsecondary School	Postsecondary Program Name	NM Postsecondary School
Child, Family, and School Social Workers	Social Work	Northern New Mexico College; New Mexico State University-Carlsbad; New Mexico State University-Grants; San Juan College; New Mexico State University-Alamogordo; Eastern New Mexico University-Roswell Campus; Clovis Community College		
Childcare Workers	Child Care Provider/Assistant	San Juan College; Central New Mexico Community College; New Mexico State University-Doña Ana		
Healthcare Social Workers	Social Work	Western New Mexico University; New Mexico State University-Main Campus		
Massage Therapists	Massage Therapy/Therapeutic Massage	University of New Mexico-Taos Campus; Northern New Mexico College; Massage Therapy Training Institute; Pima Medical Institute-Albuquerque		
Mental Health Counselors	Mental Health Counseling/Counselor	University of the Southwest	Substance Abuse/Addiction Counseling	Western New Mexico University
Mental Health and Substance Abuse Social Workers	Social Work	New Mexico State University-Main Campus	Clinical/Medical Social Work	Eastern New Mexico University-Main Campus; Western New Mexico University
Rehabilitation Counselors	Rehabilitation Science	Western New Mexico University		
Preschool Teachers	Early Childhood Education and Teaching	Central New Mexico Community College; Northern New Mexico College; University of New Mexico-Gallup Campus; New Mexico State University-Carlsbad; University of New Mexico-Taos Campus	Kindergarten/Preschool Education and Teaching	Western New Mexico University; New Mexico State University-Grants; Santa Fe Community College; Luna Community College
Social and Human Service Assistants	Human Services, General	New Mexico State University-Alamogordo, Carlsbad, Grants		
Fitness Trainers and Aerobics Instructors	Health and Physical Education/Fitness,	Santa Fe Community College; San Juan College; Western New Mexico University	Physical Education Teaching and Coaching	New Mexico Highlands University; Eastern New Mexico University-Main Campus; University of New Mexico-Main Campus; New Mexico State University-Main Campus

Note: The schools listed on this page are a representative sampling of schools that offer the course of studies shown here. Please contact New Mexico colleges directly for more current and relevant offerings.



High School Gets You Ready for College and Career

Common Career Technical Core for Human Services Career Cluster¹:

1. Evaluate principles of planning, development, implementation and evaluation to accomplish long-range goals in the human services.
2. Evaluate the role of the family, community and human services in society and the economy.
3. Use effective communication with human services clients and their families.
4. Demonstrate ethical and legal conduct in human services settings.
5. Evaluate career opportunities in each of the Human Services Career Pathways.

6. Explain how human development principles enhance the well-being of individuals and families.

Recommended Programs of Study²

	9th Grade	10th Grade	11th Grade	12th Grade
Family and Community Services	0550 Child and Human Development - Young Children	1501 Health Care Occupations Career Exploration	2501 Exploration of Public Service Careers	2773 AP Psychology - or - Dual Credit in Social Services

Other Programs of Study Course Sequences³

	9th Grade	10th Grade	11th Grade	12th Grade
Consumer Services	0502 Family & Consumer Sciences-General	1501 Health Care Occupations Career Exploration	2762 Consumer Law	0224 Entrepreneurship and Business Management – or Dual Credit in Business

Counseling & Mental Health Services	0516 Personal Development	1501 Health Care Occupations Career Exploration	2773 AP Psychology	Dual Credit in Mental Health Counseling
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Personal Care Services	0516 Personal Development	1501 Health Care Occupations Career Exploration	1502 Health Care Occupations	Dual Credit in Health and Physical Education/Fitness
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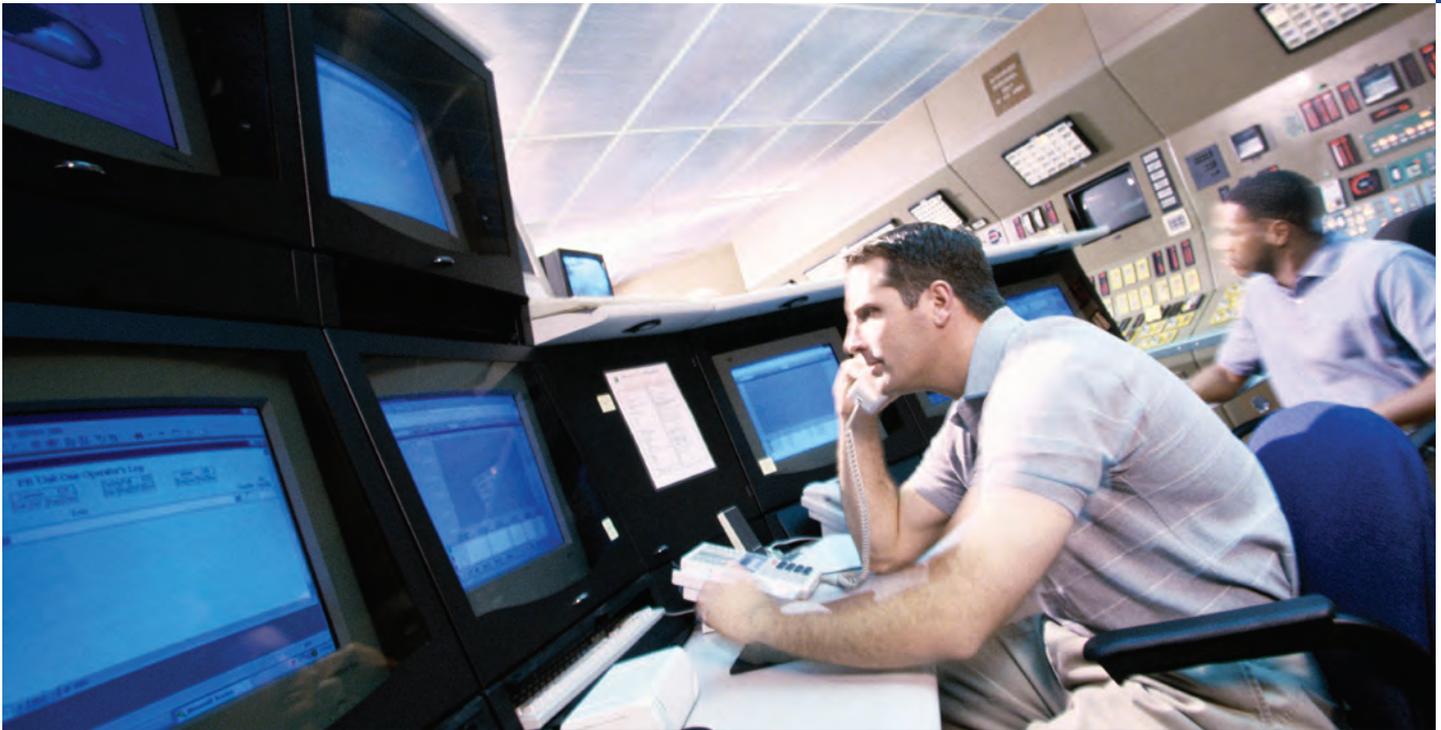
Early Childhood Development and Services	0550 Child and Human Development - Young Children	0552 Child Development II	0553 Child DevelopmentLab	Dual Credit in Early Childhood Education and Teaching -OR- 2773 AP Psychology
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1. It is expected that a student completing any Programs of Study in this Career Cluster would transition to postsecondary college and career being able to know and do each of these Standards, unless otherwise noted.

2. The PED recommends the Program of Study here based on rigor of the course, quality curriculum and course resources, relevant to State workforce needs, and a capstone class, dual credit course, or AP course and exam.

3. It is expected that a student completing these Programs of Study would transition to postsecondary prepared for college and career.

Note: The course number are from the State Teacher Accountability Reporting System (STARS). Examine your school's course catalog for corresponding course.



Information Technology

Maybe you used to shop more at the mall but now order things online. Smart electronics can give directions, and even turn on your oven while you're out. You can push a button to start your car and immediately stop to move the bicycle that showed up in your backup camera. Who's responsible for these tools?

Workers in the information technology (IT) industry develop the software and hardware that make our lives easier, and they fix and help us use these tools. As organizations and individuals face the threats and consequences of data theft, they need information security analysts to maintain online privacy. In New Mexico, this occupation has the highest expected percentage of new job growth in the IT career cluster. Because they occur in almost any industry, three IT occupations are likely to be among those that have the largest number of new jobs in New Mexico: applications software developers, computer user support specialists, and computer systems analysts.

All IT jobs are professional, and most new jobs will require postsecondary education. IT careers can be found in many work settings. The kinds of organizations most likely to employ more IT workers include custom computer programming companies; computer systems design companies; corporate and regional managing offices; software publishers and data processing and hosting businesses.

IT has changed the technical skills required in many occupations. While reducing the availability of some jobs, it has also produced totally new career options. As IT continues to evolve, we will need to keep pace with its changes in our workplaces.

CAREER RESEARCH

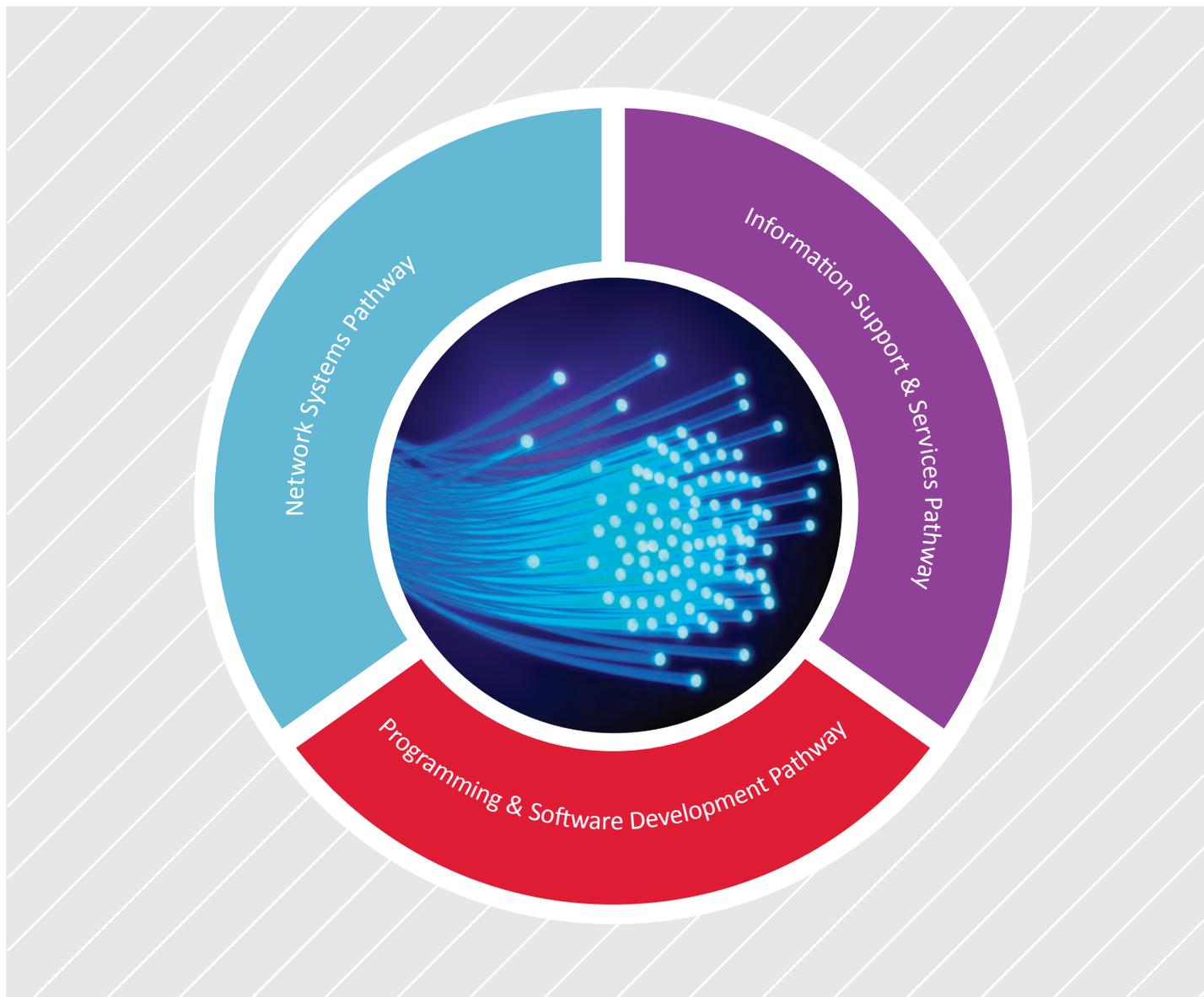
- **Center of Excellence for Information and Computing Technology**
coeforict.org
- **National Center for Women and Information Technology**
ncwit.org
- **Institute of Electrical and Electronics Engineers Computer Society**
computer.org
- **Technology Services Industry Association**
tsia.com
- **National Center for Systems Security and Information Assurance**
cssia.org
- **Technology Student Association**
<http://www.tsaweb.org>
- **New Mexico Technology Council**
nmtechcouncil.org
- **The Supercomputing Challenge**
supercomputingchallenge.org
- **GenYES: Technology Student Leaders**
<https://www.genyes.org>
- **Oracle Academy**
<https://academy.oracle.com/en/oa-web-overview.html>
- **Cisco Networking Academy**
<https://www.netacad.com>
- **New Mexico Department of Workforce Solutions**
<https://www.jobs.state.nm.us>

Find more Information Technology occupations at onetonline.org/find/career?c=11



Core Skills

- Programming
- Technology Design
- Operation Analysis
- Installation
- Systems Analysis
- Systems Evaluation
- Troubleshooting
- Equipment Selection
- Mathematics
- Science



Network Systems Pathway

- **Computer & Mathematical**
Software Developers, Applications; Software Developers, Systems Software; Network & Computer Systems Administrators; Computer Programmers; Computer Network Support Specialists; Computer Network Architects; Information Security Analysts; Other Computer Occupations; Database Administrators
- **Education, Training & Library**
Computer Science Teachers, Postsecondary
- **Management**
Computer & Information Systems Managers

Occupation



Information Support & Services Pathway

Occupation

- **Computer & Mathematical**
Software Applications Developers; Computer User Support Specialists; Computer Systems Analysts; Software Developers, Systems Software; Network & Computer Systems Administrators; Computer Network Architects; Other Computer Occupations; Database Administrators
- **Education, Training & Library**
Computer Science Teachers, Postsecondary
- **Management**
Computer & Information Systems Managers
- **Production**
Computer Numerically Controlled Machine Tool Programmers, Metal & Plastic

Programming & Software Development Pathway

Occupation

- **Architecture & Engineering**
Computer Hardware Engineers
- **Computer & Mathematical**
Software Applications Developers; Computer Systems Analysts; Software Developers, Systems Software; Network & Computer Systems Administrators; Computer Programmers; Computer Network Architects; Web Developers; Information Security Analysts; Database Administrators
- **Education, Training & Library**
Computer Science Teachers, Postsecondary; Engineering Teachers, Postsecondary
- **Management**
Computer & Information Systems Managers; Architectural & Engineering Managers
- **Production**
Computer Numerically Controlled Machine Tool Programmers, Metal & Plastic





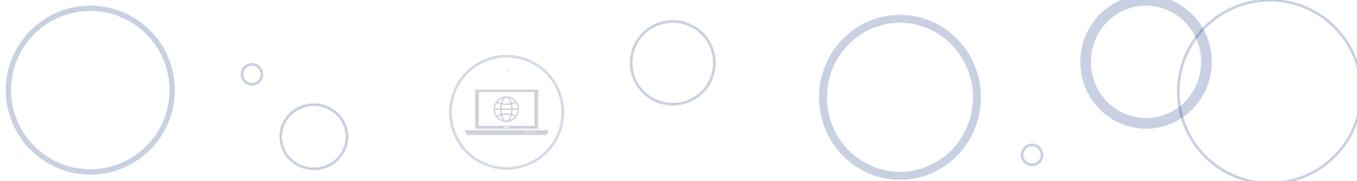
Selected Careers

Occupation ¹	Career Pathway	Job Description
Computer and Information Systems Managers	<ul style="list-style-type: none"> Information Support & Services Network Systems Programming & Software Development 	Plan, direct, or coordinate activities in such fields as electronic data processing, information systems, systems analysis, and computer programming.
Computer Network Architects	<ul style="list-style-type: none"> Information Support & Services Network Systems Programming & Software Development 	Design and implement computer and information networks, such as local area networks (LAN), wide area networks (WAN), intranets; extranets, and other data communications networks. Perform network modeling, analysis, and planning.
Computer Network Support Specialists	<ul style="list-style-type: none"> Network Systems 	Analyze, test, troubleshoot, and evaluate existing network systems, such as local area network (LAN), wide area network (WAN), and Internet systems or a segment of a network system. Perform network maintenance to ensure networks operate correctly with minimal interruption.
Web Administrators	<ul style="list-style-type: none"> Network Systems Programming & Software Development 	Manage web environment design, deployment, development and maintenance activities. Perform testing and quality assurance of web sites and web applications.
Computer Systems Analysts	<ul style="list-style-type: none"> Information Support & Services Programming & Software Development 	Analyze science, engineering, business, and other data processing problems to implement and improve computer systems. Analyze user requirements, procedures, and problems to automate or improve existing systems and review computer system capabilities, workflow, and scheduling limitations.
Computer User Support Specialists	<ul style="list-style-type: none"> Information Support & Services 	Provide technical assistance to computer users. Answer questions or resolve computer problems for clients in person, or via telephone or electronically.
Information Security Analysts	<ul style="list-style-type: none"> Network Systems Programming & Software Development 	Plan, implement, upgrade, or monitor security measures for the protection of computer networks and information. May ensure appropriate security controls are in place that will safeguard digital files and vital electronic infrastructure.
Network and Computer Systems Administrators	<ul style="list-style-type: none"> Information Support & Services Network Systems Programming & Software Development 	Install, configure, and support an organization's local area network (LAN), wide area network (WAN), and Internet systems or a segment of a network system. Monitor network to ensure network availability to all system users and may perform necessary maintenance to support network availability.
Software Developers, Applications	<ul style="list-style-type: none"> Information Support & Services Network Systems Programming & Software Development 	Develop, create, and modify general computer applications software or specialized utility programs. Analyze user needs and develop software solutions. Design software or customize software for client use with the aim of optimizing operational efficiency.
Web Developers	<ul style="list-style-type: none"> Programming & Software Development 	Design, create, and modify websites. Analyze user needs to implement website content, graphics, performance, and capacity. May integrate websites with other computer applications.

Source: Information about occupations, career pathways, job descriptions, and interests is from O*NET OnLine onetonline.org data for annual openings, growth, and wages are based on the statewide 2012-2022 Occupational Projections prepared by the New Mexico Department of Workforce Solutions at <https://www.jobs.state.nm.us/vosnet/lmi/default.aspx?pu=1&plang=E>.

Notes:

1. The table lists a sampling of occupations that represent careers in each pathway. For a full list of occupations, go to O*NET OnLine at <http://www.onetonline.org/find/career?c=1>



Annual Average Openings ²	Growth Plus Replacement Needs in NM	NM Entry Annual Wage ³	NM Median Annual Wage ³	Minimum Education ⁴	Interest ⁵
24	Neutral	\$69,720	\$96,960	High	E, C and I
9	Neutral	\$78,450	\$110,860	Middle	I, C and E
20	Neutral	\$34,510	\$56,110	Middle	R, E and C
18	Neutral	\$52,200	\$77,450	Middle	C, E and I
33	Growing	\$47,170	\$73,830	Middle	I, C and R
64	Neutral	\$27,850	\$41,720	Middle	R, I and C
16	Growing	\$71,850	\$107,640	High	C, I and R
35	Neutral	\$49,110	\$71,300	Middle	I, R and C
35	Neutral	\$57,100	\$80,900	High	I, R and C
14	Growing	\$34,590	\$54,060	High	C, I and R

2. Growth Plus Replacement Needs in NM includes the total number of jobs available due to growth and replacement needs per year.

3. The Occupational Employment Statistics OES program of the Bureau of Labor Statistics produces estimates of wages paid to employees in each occupation. These occupational wage estimates are either mean wages or percentiles. The mean of the first third of the wage distribution is used as a proxy for the entry wage. A percentile wage is a boundary. An occupational median wage (50th percentile) estimate is the boundary between the highest paid 50 percent and the lowest paid 50 percent of workers in that occupation. Half of the workers in each occupation earn more than the median wage, and half the workers earn less than the median wage.

4. Minimum Education Requirements for occupations are determined by the U.S. Bureau of Labor Statistics <http://www.bls.gov>. High Education = Doctoral or Professional Degree, Master's Degree, Bachelor's Degree; Middle Education = Associate's Degree, Postsecondary Certification; Low Education = Some College - No Degree, High School Diploma or Equivalent, Less than High School.

5. There are six interest types Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E), and Conventional (C). Discover your work-related interests on pages 5-8 to find out which types you are most like and the careers that best fit you.



Career Readiness Benchmarks for Information Technology Careers

The combined ACT WorkKeys skills benchmarks indicate that, across education groups, Level 4 is the lowest level of Locating Information and Reading for Information skills needed for the occupations on the previous pages in the Information Technology career cluster.

Education Group	Applied Mathematics Range (3-7)	Reading for Information Range (3-7)	Locating Information Range (3-6)
SKILL LEVEL REQUIRED FOR 85% OF OCCUPATIONS			
Low Education Occupations	NA	NA	NA
Middle Education Occupations	4	4	4
High Education Occupations	4	5	5



Workforce Certifications:
<i>Note: Students successfully exiting a course of study in the Information Technology Cluster may be eligible to earn some or all of these certifications.</i>
Certified Novell Administrator
Certified Web Designer
Certified Web Technician
Comp TIA Security+
Comp TIA Server+
Computer Maintenance Technician
iNet+ Certification
jCert JAVA Programmer Certification
Macromedia Director Certification

Recommended Fourth Year of Mathematics Courses
<ul style="list-style-type: none"> • Network Systems Pathway - Pre-Calculus • Information Support & Services Pathway - Pre-Calculus • Web & Digital Communications Pathway - Pre-Calculus • Programming & Software Development Pathway - Pre-Calculus

Microsoft Technology Associate:
Windows Operating System Fundamentals



Postsecondary Programs, Degrees, and Colleges

Occupation	Postsecondary Program Name	NM Postsecondary School	Postsecondary Program Name	NM Postsecondary School
Computer and Information Systems Managers	Management Information Systems, General	New Mexico Highlands University; Western New Mexico University; Eastern New Mexico University-Main Campus	Information Technology	New Mexico Institute of Mining and Technology; New Mexico State University-Main Campus; Northern New Mexico College
Computer Network Architects	Computer and Information Sciences, General	University of New Mexico-Taos Campus; University of New Mexico-Valencia County Campus; Clovis Community College; Navajo Technical University; University of New Mexico-Los Alamos Campus	Computer Systems Networking and Telecommunications	Western New Mexico University
Computer Network Support Specialists	Computer Systems Networking and Telecommunications	Western New Mexico University	System, Networking, and LAN/WAN Management/ Manager	Southwestern Indian Polytechnic Institute
Web Administrators	Data Processing and Data Processing Technology/ Technician	New Mexico State University-Grants; Eastern New Mexico University-Roswell Campus; New Mexico State University-Doña Ana; Santa Fe Community College	Computer and Information Sciences, General	University of New Mexico-Valencia County Campus; Eastern New Mexico University-Ruidoso Campus; Central New Mexico Community College; Eastern New Mexico University-Main Campus
Computer Systems Analysts	Computer and Information Sciences, General	University of New Mexico-Valencia County Campus; Eastern New Mexico University-Ruidoso Campus; Central New Mexico Community College; Eastern New Mexico University-Main Campus	Computer Information Systems	Diné College
Computer User Support Specialists	Computer Support Specialist	Eastern New Mexico University-Ruidoso Campus; Mesalands Community College		
Information Security Analysts	Information Technology	New Mexico Institute of Mining and Technology; New Mexico State University-Main Campus	Computer Science	University of New Mexico-Main Campus
Network and Computer Systems Administrators	Computer and Information Sciences, General	University of New Mexico-Valencia County Campus; Eastern New Mexico University-Ruidoso Campus; Central New Mexico Community College; New Mexico Junior College		
Software Developers, Applications	Computer Engineering, General	Northern New Mexico College; University of New Mexico-Main Campus	Computer Science	New Mexico Institute of Mining and Technology
Web Developers	Web/Multimedia Management and Webmaster	New Mexico State University-Doña Ana	Computer Programming/ Programmer, General	Luna Community College

Note: The schools listed on this page are a representative sampling of schools that offer the course of studies shown here. Please contact New Mexico colleges directly for more current and relevant offerings.



High School Gets You Ready for College and Career

Common Career Technical Core for the Information Technology Career Cluster¹:

1. Demonstrate effective professional communication skills and practices that enable positive customer relationships.
2. Use product or service design processes and guidelines to produce a quality information technology (IT) product or service.
3. Demonstrate the use of cross-functional teams in achieving IT project goals.
4. Demonstrate positive cyber citizenry by applying industry-accepted ethical practices and behaviors.
5. Explain the implications of IT on business development.
6. Describe trends in emerging and evolving computer technologies and their influence on IT practices.
7. Perform standard computer backup and restore procedures to protect IT information.
8. Recognize and analyze potential IT security threats to develop and maintain security requirements.
9. Describe quality assurance practices and methods employed in producing and providing quality IT products and services.
10. Describe the use of computer forensics to prevent and solve information technology crimes and security.
11. Demonstrate knowledge of the hardware components associated with information systems.
12. Compare key functions and applications of software and determine maintenance strategies for computer systems.

Recommended Programs of Study²

	9th Grade	10th Grade	11th Grade	12th Grade
Programming & Software Development: Oracle Academy Database Design & Programming	0314 Database Foundations	0330 Database Design and Programming	0331 Database Programming with SQL	0394 Application Development Foundations
Programming & Software Development: PLTW Computer Cybersecurity	0344 PLTW - Computer Science Essentials	0345 PLTW - Computer Science Principles -OR- 0336 AP Computer Science	0346 PLTW - Computer Science A -OR- 0327 AP Computer Science A	0347 PLTW - Cybersecurity
Information Support & Services: GenYES Program	0320 Computer Technology Assistant I	0321 Computer Technology Assistant II	0322 Computer Technology Assistant III	0336 AP Computer Science Principles
Network Systems: Cisco Networking Academy	0340 IT Essentials	0323 Computer Science/ Programming	0341 CCNA Routing and Switching Part 1	0342 CCNA Routing and Switching Part 2

1. It is expected that a student completing any Programs of Studies in this Career Cluster would transition to postsecondary college and career being able to know and do each of these Standards, unless otherwise noted.

2. The PED recommends the Program of Study here based on rigor of the course, quality curriculum and course resources, relevant to State workforce needs, and a capstone class, dual credit course, or AP course and exam.

3. It is expected that a student completing these Programs of Study would transition to postsecondary prepared for college and career.

Note: The course numbers are from the State Teacher Accountability Reporting System (STARS). Examine your school's course catalog for corresponding course.



Law, Public Safety, Corrections & Security

When there's something strange in your neighborhood, who are you going to call? Typically someone from this career cluster will respond to your request for help. These workers protect us from crime and other sources of harm like natural disasters. They help us receive fair treatment and get justice when we've been wronged. Some workers also set up and implement security plans.

If you pay attention to the evening news or watch television dramas, you're aware of the most obvious occupations in this industry: police officers, fire fighters, and lawyers. Less apparent careers include hazardous material removal workers, ski patrol workers, and postsecondary educators who teach criminal justice, psychology, and anthropology classes. Occupations with faster than average growth in New Mexico include security guards, paralegals, and emergency medical technicians.

Work environments and educational backgrounds differ in these careers. Although some workers stay in offices most of the day, others work in the outdoors. For certain jobs, workers have to pass medical exams and demonstrate strength and agility. Some careers may be dangerous and require shift work, sometimes with long hours. Many of these jobs can be found at all levels of government, in law offices, and security businesses.

CAREER RESEARCH

- American Bar Association
americanbar.org
- International City/County Management Association
icma.org
- U.S. Department of Homeland Security
dhs.gov
- National Institute of Corrections
nicic.gov
- Fraternal Order of Police
fop.net
- Federal Law Enforcement Jobs
federaljobs.net/law.htm
- Center for Civic Values: Mock Trial
<http://www.civicvalues.org/mock-trial>
- American Red Cross: Training and Certification
<https://www.redcross.org/take-a-class>
- National Coordinating Council for Career and Technical Student Organizations
<http://www.ctsos.org>
- New Mexico Department of Workforce Solutions
<https://www.jobs.state.nm.us>

Find more Law, Public Safety, Corrections & Security occupations at
oneline.org/find/career?c=12



Core Skills

- Negotiation
- Persuasion
- Speaking
- Social Perceptiveness
- Active Listening
- Writing
- Service Orientation
- Critical Thinking
- Judgement & Decision Making
- Instructing



Security & Protective Services Pathway

Occupation

- **Education, Training & Library**
Criminal Justice & Law Enforcement Teachers, Postsecondary
- **Protective Service**
Security Guards; Other First-Line Supervisors of Protective Service Workers; Private Detectives & Investigators; Crossing Guards; Animal Control Workers

Correction Services Pathway

Occupation

- **Community & Social Service**
Child, Family & School Social Workers; Probation Officers & Correctional Treatment Specialists; Other Social Workers
- **Education, Training & Library**
Criminal Justice & Law Enforcement Teachers, Postsecondary; Psychology Teachers, Postsecondary
- **Protective Service**
Security Guards; Correctional Officers & Jailers; First-Line Supervisors of Police & Detectives; Other Protective Service Workers; First-Line Supervisors of Correctional Officers



Emergency & Fire Management Services Pathway

Occupation

- **Construction & Extraction**
Hazardous Materials Removal Workers
- **Healthcare Practitioners & Technicians**
Emergency Medical Technicians & Paramedics
- **Office & Administrative Support**
Police, Fire & Ambulance Drivers
- **Protective Service**
Correctional Officers & Jailers; Firefighters; First-Line Supervisors of Firefighting & Prevention Workers; Fire Inspectors & Investigators

Law Enforcement Services Pathway

Occupation

- **Education, Training & Library**
Criminal Justice & Law Enforcement Teachers, Postsecondary
- **Life, Physical & Social Science**
Forensic Science Technicians
- **Protective Service**
Police & Sheriff's Patrol Officers; Correctional Officers & Jailers; First-Line Supervisors of Police & Detectives; Detectives & Criminal Investigators; Other Protective Service Workers; Transportation Security Screeners; Animal Control Workers; Bailiffs

Legal Services Pathway

Occupation

- **Education, Training & Library**
Law Teachers, Postsecondary
- **Legal**
Lawyers; Paralegals & Legal Assistants; Other Legal Support Workers; Title Examiners, Abstractors & Searchers
- **Office & Administrative Support**
Legal Secretaries





Selected Careers

Occupation ¹	Career Pathway	Job Description
Correctional Officers and Jailers	<ul style="list-style-type: none"> Correction Services Emergency & Fire Management Services Law Enforcement Services 	Oversee individuals who have been arrested and are awaiting trial or who have been sentenced to serve time in a jail or prison. Guard inmates following regulations and procedures. May guard prisoners traveling between jail, courtroom, prison, or other points.
Detectives and Criminal Investigators	<ul style="list-style-type: none"> Law Enforcement Services 	Gather facts and collect evidence of possible federal, state, or local crimes to help determine if enough evidence exists to recommend going to court.
Emergency Medical Technicians and Paramedics	<ul style="list-style-type: none"> Emergency & Fire Management Services 	Assess injuries, administer emergency medical care, and remove people who are trapped. Transport injured or sick persons to hospitals.
Firefighters	<ul style="list-style-type: none"> Emergency & Fire Management Services 	Control and put out fires or respond to emergency situations where life, property, or the environment is at risk. Duties may include fire prevention, emergency medical service, hazardous material response, search and rescue, and disaster assistance.
Forest Fire Fighting and Prevention Supervisors	<ul style="list-style-type: none"> Emergency & Fire Management Services 	Directly supervise and coordinate activities of workers engaged in firefighting and fire prevention and control.
Forensic Science Technicians	<ul style="list-style-type: none"> Law Enforcement Services 	Help investigate crimes by collecting and analyzing physical evidence. Many technicians specialize in either crime scene investigation or laboratory analysis. Most forensic science technicians spend some time writing reports.
Lawyers	<ul style="list-style-type: none"> Legal Services 	Represent clients in criminal and civil court and other legal proceedings. Manage or advise clients on legal matters. Draw up legal documents. May specialize in a single area or practice in many areas of law.
Paralegals and Legal Assistants	<ul style="list-style-type: none"> Legal Services 	Investigate facts, prepare legal documents, or research previous legal findings to assist lawyers. Conduct research to support a legal proceeding, build a defense, or start legal action.
Police Patrol Officers	<ul style="list-style-type: none"> Law Enforcement Services 	Enforce laws to keep order and protect lives and property. May patrol a specific area, direct traffic, and issue traffic citations. Also may investigate accidents, apprehend and arrest suspects, or serve legal documents.
Forest and Conservation Technicians	<ul style="list-style-type: none"> Emergency & Fire Management Services 	Provide technical assistance regarding the conservation of soil, water, forests, or related natural resources. May compile data pertaining to size, content, condition, and other characteristics of forest tracts, under the direction of foresters; or train and lead forest workers in forest propagation, fire prevention and suppression. May assist conservation scientists in managing, improving, and protecting rangelands and wildlife habitats.

Source: Information about occupations, career pathways, job descriptions, and interests is from O*NET OnLine onetonline.org data for annual openings, growth, and wages are based on the statewide 2012-2022 Occupational Projections prepared by the New Mexico Department of Workforce Solutions at <https://www.jobs.state.nm.us/vosnet/lmi/default.aspx?pu=1&plang=E>.

Notes:

1. The table lists a sampling of occupations that represent careers in each pathway. For a full list of occupations, go to O*NET OnLine at <http://www.onetonline.org/find/career?c=1>



Annual Average Openings ²	Growth Plus Replacement Needs in NM	NM Entry Annual Wage ³	NM Median Annual Wage ³	Minimum Education ⁴	Interest ⁵
Confidential	Neutral	\$29,460	\$34,790	Middle	R, E and C
48	Neutral	\$55,750	\$81,690	Middle	E and I
53	Growing	\$23,860	\$32,910	Middle	S, I and R
50	Neutral	\$24,310	\$35,140	Middle	R, S and E
26	Neutral	\$44,620	\$52,380	High	E, R and S
5	Growing	\$22,170	\$32,110	High	I, R and C
58	Neutral	\$58,270	\$84,630	High	E and I
33	Neutral	\$29,900	\$41,110	Middle	C, I and E
145	Neutral	\$40,680	\$53,850	Middle	R, E and C
38	Neutral	\$28,130	\$32,860	Low	R, I and E

2. Growth Plus Replacement Needs in NM includes the total number of jobs available due to growth and replacement needs per year.

3. The Occupational Employment Statistics OES program of the Bureau of Labor Statistics produces estimates of wages paid to employees in each occupation. These occupational wage estimates are either mean wages or percentiles. The mean of the first third of the wage distribution is used as a proxy for the entry wage. A percentile wage is a boundary. An occupational median wage (50th percentile) estimate is the boundary between the highest paid 50 percent and the lowest paid 50 percent of workers in that occupation. Half of the workers in each occupation earn more than the median wage, and half the workers earn less than the median wage.

4. Minimum Education Requirements for occupations are determined by the U.S. Bureau of Labor Statistics <http://www.bls.gov>. High Education = Doctoral or Professional Degree, Master's Degree, Bachelor's Degree; Middle Education = Associate's Degree, Postsecondary Certification; Low Education = Some College - No Degree, High School Diploma or Equivalent, Less than High School.

5. There are six interest types Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E), and Conventional (C). Discover your work-related interests on pages 5-8 to find out which types you are most like and the careers that best fit you.



Career Readiness Benchmarks for Law, Public Safety, Corrections & Security Careers

The combined ACT WorkKeys skills benchmarks indicate that, across education groups, Level 3 is the lowest level of Applied Mathematics and Reading for Information skills needed for the occupations on the previous pages in this career cluster.

Education Group	Applied Mathematics Range (3-7)	Reading for Information Range (3-7)	Locating Information Range (3-6)
SKILL LEVEL REQUIRED FOR 85% OF OCCUPATIONS			
Low Education Occupations	NA	NA	NA
Middle Education Occupations	3	4	3
High Education Occupations	4	6	4



Workforce Certifications:
<i>Note: Students successfully exiting a course of study in the Law, Public Safety, Corrections, and Security Cluster may be eligible to earn some or all of these certifications.</i>
Precision Exams Certification: Law Enforcement
Red Cross CPR and First Aid and AED
Basic Wildland Firefighting Certification
Emergency Medical Technician (EMT)
Police Explorer Certification

- ### Recommended Fourth Year of Mathematics Courses
- Correction Services Pathway - Statistics
 - Emergency & Fire Management Services Pathway – Statistics
 - Law Enforcement Services Pathway – Statistics
 - Legal Services Pathway – Statistics
 - Security & Protective Services Pathway - Trigonometry



Postsecondary Programs, Degrees, and Colleges

Occupation	Postsecondary Program Name	NM Postsecondary School	Postsecondary Program Name	NM Postsecondary School
Correctional Officers and Jailers	Corrections	University of New Mexico-Gallup Campus; Luna Community College; University of New Mexico-Main Campus	Certified Corrections Officer/ Provisional	Certified by American Correctional Association
Detectives and Criminal Investigators	Criminal Justice/ Police Science	San Juan College; Eastern New Mexico University-Ruidoso Campus; Santa Fe Community College; Clovis Community College		
Emergency Medical Technicians and Paramedics	Emergency Medical Technology/ Technician (EMT Paramedic)	New Mexico State University-Doña Ana; Santa Fe Community College; Central New Mexico Community College; San Juan College; New Mexico State University-Carlsbad		
Firefighters	Fire Science/ Fire-fighting	Clovis Community College; Northern New Mexico College; San Juan College; New Mexico State University-Doña Ana; Eastern New Mexico University-Roswell Campus		
Forest Fire Fighting and Prevention Supervisors	Fire Services Administration	New Mexico State University-Alamogordo; Luna Community College		
Forensic Science Technicians	Forensic Science and Technology	University of the Southwest; Eastern New Mexico University-Main Campus		
Lawyers	Law	University of New Mexico-Main Campus		
Paralegals and Legal Assistants	Legal Assistant/ Paralegal	Santa Fe Community College; New Mexico State University-Alamogordo; Clovis Community College; San Juan College; Santa Fe Community College; Central New Mexico Community College		
Police Patrol Officers	Criminal Justice/ Police Science	San Juan College; Eastern New Mexico University-Ruidoso Campus; Santa Fe Community College; Clovis Community College		
Forest and Conservation Technicians	Certified Erosion, Sediment and Storm Water Inspector	Certified by: EnviroCert International, Inc.	Fire Prevention and Safety Technology/ Technician	Eastern New Mexico University-Roswell Campus

Note: The schools listed on this page are a representative sampling of schools that offer the course of studies shown here. Please contact New Mexico colleges directly for more current and relevant offerings.



High School Gets You Ready for College and Career

Common Career Technical Core for Human Services Career Cluster¹:

1. Analyze the nature and scope of the Law, Public Safety, Corrections and Security Career Cluster and the role law, public safety, corrections and security play in society and the economy.
2. Formulate ideas, proposals and solutions to ensure effective and efficient delivery of law, public safety, corrections and/or security services.
3. Assess and implement measures to maintain safe and healthy working conditions in a law, public safety, corrections and/or security environment.
4. Conduct law, public safety, corrections and security work tasks in accordance with employee and employer rights, obligations and responsibilities, including occupational safety and health requirements.
5. Analyze the various laws, ordinances, regulations and organizational rules that apply to careers in law, public safety, corrections and security.
6. Describe various career opportunities and means to those opportunities in each of the Law, Public Safety, Corrections and Security Career Pathways.

Recommended Programs of Study²

	9th Grade	10th Grade	11th Grade	12th Grade
Law Enforcement Services	2501 Exploration of Public Service Careers	2503 Community Protection	2513 Criminal Justice Assisting	Dual Credit in Criminal Justice
Emergency & Fire Management Services	2501 Exploration of Public Service Careers	2503 Community Protection	2523 Fire Fighting	Dual Credit in EMT - or - 1517 EMT Basic

Other Programs of Study Course Sequences³

	9th Grade	10th Grade	11th Grade	12th Grade
Correction Services	2501 Exploration of Public Service Careers	2503 Community Protection	2513 Criminal Justice Assisting	2597 Public, Protective, and Social Services
Legal Services	2501 Exploration of Public Service Careers	2513 Criminal Justice Assisting	2761 Law Studies	Dual Credit in Criminal Justice
Security & Protective Services	2501 Exploration of Public Service Careers	2503 Community Protection	2513 Criminal Justice Assisting	Dual Credit in Criminal Justice

1. It is expected that a student completing any Programs of Study in this Career Cluster would transition to postsecondary college and career being able to know and do each of these Standards, unless otherwise noted.

2. The PED recommends the Program of Study here based on rigor of the course, quality curriculum and course resources, relevant to State workforce needs, and a capstone class, dual credit course, or AP course and exam.

3. It is expected that a student completing these Programs of Study would transition to postsecondary prepared for college and career.

Note: The course numbers are from the State Teacher Accountability Reporting System (STARS). Examine your school's course catalog for corresponding course.



Manufacturing

Although manufacturing often brings to mind huge, wide open factory floors, it also includes small businesses. Manufacturing businesses can range from in-home bakeries to large corporations like Intel. One thing most manufacturing businesses have in common: increasing use of technology. From roastmasters who use programmable coffee roasting machines to industrial engineering technicians who operate 3-D printers that make metal parts, manufacturing is quite different than it was even a decade ago.

Manufacturing workers change materials, substances, or components into new products. Manufactured goods include or are made from chemicals, computers and electronics, fabricated metal products, food, machinery, plastics and rubber products, or transportation equipment. While businesses still hire workers for traditional mass production of simple products, manufacturing jobs increasingly use technologies that enable workers to customize, shorten production time, and create lighter weight, more durable products.

Manufacturing includes occupations with a variety of education and experience backgrounds, but job numbers have been decreasing in occupations that require the least amount of education. New Mexico's growth careers in manufacturing often involve installing, maintaining, and repairing increasingly technical equipment. Industries most likely to hire this cluster's workers include Computer & Electronic Product, chemical and non-metal, and food and beverage manufacturers.

CAREER RESEARCH

- **National Coordinating Council for Career and Technical Student Organizations**
ctsos.org
- **Association for Manufacturing Technology**
amtonline.org
- **National Nanomanufacturing Network**
internano.org
- **Manufacturing Day**
mfgday.com
- **SkillsUSA**
skillsusa.org
- **Biomanufacturing Training and Education Center**
www.btec.ncsu.edu
- **Food Manufacturing Industry**
collegegrad.com/industries/food-manufacturing
- **New Mexico Department of Workforce Solutions**
<https://www.jobs.state.nm.us>

Find more Manufacturing occupations at
ononline.org/find/career?c=13



Core Skills

- Repairing
- Equipment Maintenance
- Operation & Control
- Equipment Selection
- Troubleshooting
- Operation Monitoring
- Quality Control Analysis
- Installation
- Technology Design
- Monitoring



Manufacturing Production Process Development Pathway

Occup.

- Life, Physical & Social Science
Chemical Technicians; Environmental Science & Protection Technicians, Including Health; Other Life, Physical & Social Science Technicians
- Production
Chemical Equipment Operators & Tenders; Electromechanical Equipment Assemblers

Quality Assurance Pathway

Occupation

- Architecture & Engineering
Environmental Engineering Technicians
- Healthcare Practitioners & Technicians
Occupational Health & Safety Specialists
- Production
Inspectors, Testers, Sorters, Samplers & Weighers



Maintenance, Installation & Repair Pathway

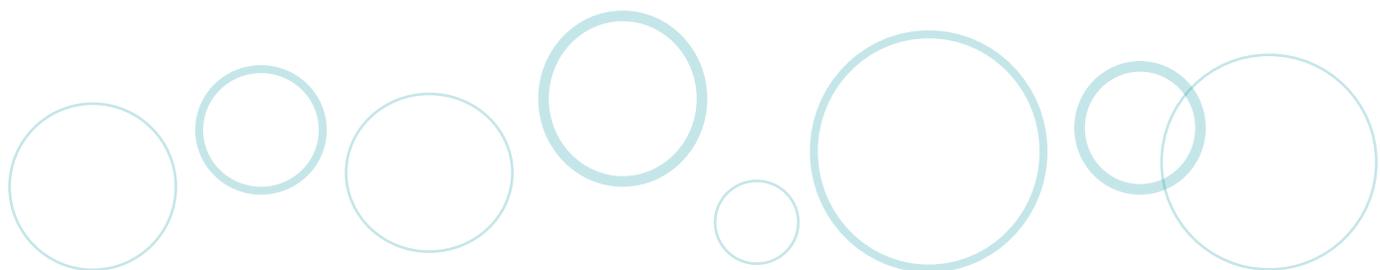
Occupation

- **Architecture & Engineering**
Civil Engineering Technicians; Electrical & Electronic Engineering Technicians; Industrial Engineering Technicians; Mechanical Engineering Technicians; Other Engineering Technicians, Except Drafters
- **Arts, Design, Entertainment, Sports & Media**
Interior Designers
- **Computer & Mathematical**
Software Developers, Applications; Computer User Support Specialists
- **Construction & Extraction**
Other Construction & Related Workers; Hazardous Materials Removal Workers; Fence Erectors; Elevator Installers & Repairers
- **Installation, Maintenance & Repair**
Maintenance & Repair Workers, General; First-Line Supervisors of Mechanics, Installers & Repairers; Industrial Machinery Mechanics; Telecommunications Equipment Installers & Repairers, Except Line Installers; Helpers – Installation, Maintenance & Repair Workers; Computer Automated Teller & Officer Machine Repairers; Maintenance Workers, Machinery; Other Installation, Maintenance & Repair Workers; Mobile Heavy Equipment Mechanics, Except Engines; Telecommunications Line Installers & Repairers; Security & Fire Alarm Systems Installers; Electrical & Electronics Repairers, Commercial & Industrial Equipment; Medical Equipment Repairers; Outdoor Power Equipment & Other Small Engine Mechanics; Home Appliance Repairers; Millwrights; Rail Car Repairers; Locksmiths & Safe Repairers; Other Precision Instrument & Equipment Repairers
- **Life, Physical & Social Science**
Biological Technicians
- **Office & Administrative Support**
Production, Planning & Expediting Clerks
- **Computer & Mathematical**
Inspectors, Testers, Sorters, Samplers & Weighers; Electromechanical Equipment Assemblers; Engine & Other Machine Assemblers; Jewelers & Precious Stone Metal Workers; Medical Appliance Technicians

Production Pathway

Occupation

- **Architecture & Engineering**
Industrial Engineering Technicians; Mechanical Engineering Technicians
- **Business & Financial Operations**
Purchasing Agents, Except Wholesale, Retail, & Farm Products
- **Construction & Extraction**
Sheet Metal Workers; Hazardous Materials Removal Workers
- **Installation, Maintenance & Repair**
Millwrights; Recreational Vehicle Service Technicians
- **Management**
Industrial Production Managers
- **Office & Administrative Support**
Weighers, Measurers, Checkers & Samplers, Recordkeeping
- **Production**
Team Assemblers; First-Line Supervisors of Production & Operating Workers; Inspectors, Testers, Sorters, Samplers, & Weighers; Helpers – Production Workers; Packaging & Filling Machine Operators & Tenders; Machinists; Welders, Cutters, Solderers & Brazers; Bakers; Mixing & Blending Machine Setters, Operators & Tenders; Computer-Controlled Machine Tool Operators; Metal & Plastic; Woodworking Machine Setters, Operators & Tenders, Except Sawing; Other Production Workers; Paper Goods Machine Setters, Operators & Tenders; Separating, Filtering, Clarifying, Precipitating & Still Machine Setters, Operators & Tenders; Coating, Painting & Spraying Machine Setters, Operators & Tenders; Structural Metal Fabricators & Fitters; Tool & Die Makers; Chemical Equipment Operators & Tenders; Painters, Transportation Equipment; Photographic Process Workers & Processing Machine Operators; Electromechanical Equipment Assemblers; Adhesive Bonding Machine Operators & Tenders; Forging Machine Setters, Operators & Tenders, Metal & Plastic; Engine & Other Machine Assemblers; Plating & Coating Machine Setters, Operators, & Tenders, Metal & Plastic; Computer Numerically Controlled Machine Tool Programmers, Metal & Plastic; Jewelers & Precious Stone & Metal Workers; Molders, Shapers & Casters, Except Metal & Plastic; Painting, Coating, & Decorating Workers; Fiberglass Laminators & Fabricators; Tool Grinders, Filers & Sharpeners; Crushing, Grinding, & Polishing Machine Setters, Operators, & Tenders; Ophthalmic Laboratory Technicians
- **Transportation & Material Moving**
Machine Feeders & Offbearers





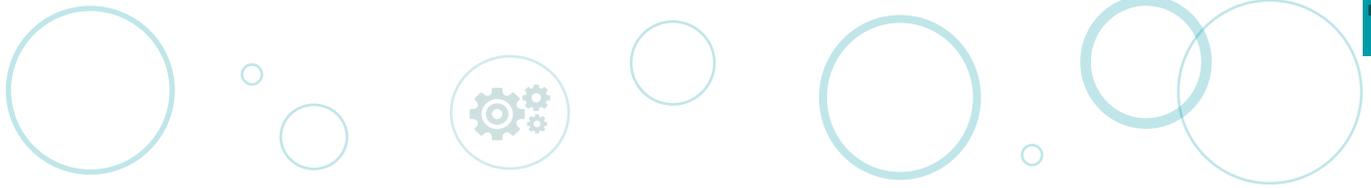
Selected Careers

Occupation ¹	Career Pathway	Job Description
Maintenance and repair workers	<ul style="list-style-type: none"> Maintenance, Installation & Repair 	Perform work involving the skills of two or more maintenance or craft occupations to keep machines, mechanical equipment, or the structure of an establishment in repair. Duties may involve pipe fitting; boiler making; insulating; welding; machining; carpentry; repairing electrical or mechanical equipment; installing, aligning, and balancing new equipment; and repairing buildings, floors, or stairs.
Computer-Controlled Machine Tool Operators, Metal and Plastic	<ul style="list-style-type: none"> Production 	Operate computer-controlled machines or robots to cut, shape, and form metal or plastic materials.
Industrial Machinery Mechanics	<ul style="list-style-type: none"> Maintenance, Installation & Repair 	Repair, install, adjust, or maintain machinery used in industrial production and processing. Provide similar services for refinery and pipeline distribution systems.
Machinists	<ul style="list-style-type: none"> Production 	Set up and operate machine tools to produce precision parts and instruments. Includes precision instrument makers who make, modify, or repair mechanical instruments. Use knowledge of mechanics, mathematics, metal properties, layout, and machining procedures to perform work.
Environmental Science and Protection Technicians, Including Health	<ul style="list-style-type: none"> Manufacturing Production Process Development 	Perform laboratory and field tests to monitor the environment and investigate sources of pollution, including those that affect health, under the direction of an environmental scientist, engineer, or other specialist. May collect samples of gases, soil, water, and other materials for testing.
Inspectors, Testers, Sorters, Samplers, and Weighers	<ul style="list-style-type: none"> Quality Assurance 	Inspect, test, sort, sample, or weigh nonagricultural raw materials or processed, machined, fabricated, or assembled parts or products for defects, wear, and deviations from specifications. May use precision measuring instruments and complex test equipment.
Occupational Health and Safety Specialists	<ul style="list-style-type: none"> Quality Assurance 	Analyze many types of work environments and work procedures. Inspect workplaces to make sure regulations on safety, health, and the to prevent disease or injury to workers and damage to the environment.
Sheet Metal Workers	<ul style="list-style-type: none"> Production 	Fabricate, assemble, install, and repair sheet metal products and equipment like ducts for heating and air-conditioning, control boxes, and drainpipes.
Electrical Engineering Technicians	<ul style="list-style-type: none"> Production 	Lay out, build, test, troubleshoot, repair, and modify electronic components, parts, equipment, and systems, such as computer equipment, test equipment, and machine tool numerical controls, applying principles and theories of electronics, electrical circuitry, engineering mathematics, electronic and electrical testing, and physics.
Welders, Cutters, Solderers, and Brazers	<ul style="list-style-type: none"> Production 	Weld or join metal parts using hand welding, flame cutting, hand soldering, or brazing equipment. Fill holes, indentations, or seams of fabricated metal products.

Source: Information about occupations, career pathways, job descriptions, and interests is from O*NET OnLine onetonline.org data for annual openings, growth, and wages are based on the statewide 2012-2022 Occupational Projections prepared by the New Mexico Department of Workforce Solutions at <https://www.jobs.state.nm.us/vosnet/lmi/default.aspx?pu=1&plang=E>.

Notes:

1. The table lists a sampling of occupations that represent careers in each pathway. For a full list of occupations, go to O*NET OnLine at <http://www.onetonline.org/find/career?c=1>



Annual Average Openings ²	Growth Plus Replacement Needs in NM	NM Entry Annual Wage ³	NM Median Annual Wage ³	Minimum Education ⁴	Interest ⁵
256	Neutral	\$22,320	\$32,400	Low	R,Cand I
5	Growing	\$24,520	\$33,350	Low	R and C
83	Growing	\$35,360	\$53,240	Middle	R, I and C
34	Neutral	\$33,850	\$50,170	Middle	R, C and I
10	Neutral	\$34,680	\$46,140	High	I, R and C
48	Neutral	\$27,080	\$40,910	Middle	R, I and C
18	Neutral	\$45,070	\$71,570	High	I and C
19	Neutral	\$30,520	\$39,800	Low	R
38	Neutral	\$41,680	\$63,850	Middle	R and I
72	Neutral	\$31,070	\$44,480	Middle	R and C

2. Growth Plus Replacement Needs in NM includes the total number of jobs available due to growth and replacement needs per year.

3. The Occupational Employment Statistics OES program of the Bureau of Labor Statistics produces estimates of wages paid to employees in each occupation. These occupational wage estimates are either mean wages or percentiles. The mean of the first third of the wage distribution is used as a proxy for the entry wage. A percentile wage is a boundary. An occupational median wage (50th percentile) estimate is the boundary between the highest paid 50 percent and the lowest paid 50 percent of workers in that occupation. Half of the workers in each occupation earn more than the median wage, and half the workers earn less than the median wage.

4. Minimum Education Requirements for occupations are determined by the U.S. Bureau of Labor Statistics <http://www.bls.gov>. High Education = Doctoral or Professional Degree, Master's Degree, Bachelor's Degree; Middle Education = Associate's Degree, Postsecondary Certification; Low Education = Some College - No Degree, High School Diploma or Equivalent, Less than High School.

5. There are six interest types Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E), and Conventional (C). Discover your work-related interests on pages 5-8 to find out which types you are most like and the careers that best fit you.



Career Readiness Benchmarks for Manufacturing Careers

The aggregated ACT WorkKeys skills benchmarks indicate that, across education groups, Level 4 is the lowest level of Applied Mathematics, Locating Information, and Reading for Information skills needed for jobs in the Manufacturing career cluster.

Education Group	Applied Mathematics Range (3-7)	Reading for Information Range (3-7)	Locating Information Range (3-6)
SKILL LEVEL REQUIRED FOR 85% OF OCCUPATIONS			
Low Education Occupations	4	4	4
Middle Education Occupations	5	5	5
High Education Occupations	6	6	5



NCCER Industrial Maintenance

Workforce Certifications:
<i>Note: Students successfully exiting a course of study in the Manufacturing Cluster may be eligible to earn some or all of these certifications.</i>
NCCER Basic Core
AWS-SENS
Welding Technician
NCCER HVAC Excellence
S/P2 Valvoline Safety & Pollution Prevention
NCCER Industrial Maintenance
NCCER Sheet Metal
NCCER Welding
Gas Metal Arc Welding
Gas Tungsten Arc Welding
Shielded Metal Arc Welding
Flux Core Arc Welding D9.4 4 2F
PhlebFlux Core Arc Welding D9.4 4 2F

Recommended Fourth Year of Mathematics Courses

- Production Pathway - Trigonometry
- Manufacturing Production Process Development Pathway - Trigonometry
- Maintenance, Installation & Repair Pathway – Trigonometry
- Quality Assurance Pathway – Trigonometry
- Logistics & Inventory Control Pathway – Trigonometry
- Health, Safety & Environmental Assurance Pathway - Trigonometry



Postsecondary Programs, Degrees, and Colleges

Occupation	Postsecondary Program Name	NM Postsecondary School	Postsecondary Program Name	NM Postsecondary School
Maintenance and Repair Workers	Building/Property Maintenance	New Mexico State University-Doña Ana, Navajo Technical University, Santa Fe Community College, Eastern New Mexico University-Roswell Campus		
Computer-Controlled Machine Tool Operators, Metal and Plastic	Computer Numerically Controlled (CNC) Machinist Technology/CNC Machinist	San Juan College	Machine Shop Technology/Assistant	Northern New Mexico College
Industrial Machinery Mechanics	Industrial Mechanics and Maintenance Technology	San Juan College		
Machinists	Machine Tool Technology/Machinist	Central New Mexico Community College		
Environmental Science and Protection Technicians, Including Health	Environmental Science	New Mexico Institute of Mining and Technology; University of New Mexico-Main Campus	Environmental Science	Diné College
Inspectors, Testers, Sorters, Samplers, and Weighers	Certified Welding Inspector	Certified by the American Welding Society	Certified Weighing Technicians	Certified by the International Society of Weighing and Measurement
Occupational Health and Safety Specialists	Environmental Health	New Mexico State University-Main Campus		
Sheet Metal Workers	Certification: Precision Sheet Metal Operator Certification Third-party industry-endorsed	Certified by: Fabricators & Manufacturers Association, International		
Electrical Engineering Technicians	Electrical, Electronic and Communications Engineering Technology/Technician	Central New Mexico Community College; New Mexico State University-Doña Ana; Clovis Community College; Western New Mexico University		
Welders, Cutters, Solderers, and Brazers	Welding Technology/Welder	Northern New Mexico College; Eastern New Mexico University-Roswell Campus; New Mexico State University-Doña Ana; Clovis Community College; San Juan College; Central New Mexico Community College		

Note: The schools listed on this page are a representative sampling of schools that offer the course of studies shown here. Please contact New Mexico colleges directly for more current and relevant offerings.



High School Gets You Ready for College and Career

Common Career Technical Core for the Manufacturing Career Cluster¹:

1. Evaluate the nature and scope of the Manufacturing Career Cluster and the role of manufacturing in society and in the economy.
2. Analyze and summarize how manufacturing businesses improve performance.
3. Comply with federal, state and local regulations to ensure worker safety and health and environmental work practices.
4. Describe career opportunities and means to achieve those opportunities in each of the Manufacturing Career Pathways.
5. Describe government policies and industry standards that apply to manufacturing.
6. Demonstrate workplace knowledge and skills common to manufacturing.

Recommended Program of Study²

	9th Grade	10th Grade	11th Grade	12th Grade
Production	2414 Welding I	2416 Welding II	2417 Welding III	Dual Credit in Precision Metal Works

Other Programs of Study Course Sequences³

	9th Grade	10th Grade	11th Grade	12th Grade
Quality Assurance	1611 General Technology Education	1624 Manufacturing Systems	1625 Technology Systems	Dual Credit in Environmental Science
Manufacturing Production Process	1611 General Technology Education	1624 Manufacturing Systems	1625 Technology Systems	Dual Credit in Machinist Technologies -OR- 2403 Machining
Logistics & Inventory Control	1611 General Technology Education	1624 Manufacturing Systems	1625 Technology Systems	Dual Credit in Applied Technologies
Health, Safety & Environmental Assurance	1611 General Technology Education	1624 Manufacturing Systems	1625 Technology Systems	Dual Credit in Environmental Science

1. It is expected that a student completing any Program of Study in this Career Cluster would transition to postsecondary college and career being able to know and do each of these Standards, unless otherwise noted.

2. The PED recommends the Program of Study here based on rigor of the course, quality curriculum and course resources, relevant to State workforce needs, and a capstone class, dual credit course, or AP course and exam.

3. It is expected that a student completing these Programs of Study would transition to postsecondary prepared for college and career.

Note: The course numbers are from the State Teacher Accountability Reporting System (STARS). Examine your school's course catalog for corresponding course.



Marketing, Sales & Service

Who helps form your first opinion of a business or other organization? First impressions count, so employees from hotel desk clerks to cashiers to property managers serve as important marketers. Marketing, Sales and Service also includes jobs that have a more obvious connection with marketing such as marketing managers and merchandise displayers and window trimmers. The main goal of employees in this cluster is to help their organization reach its objectives.

Among New Mexico's occupations with expected above average growth are customer service representatives, market research analysts, and meeting, convention, and event planners. Retail salespersons top the list of the highest number of new jobs. While many workers in the Marketing, Sales and Service cluster need a high school education, careers that require an Associate or Bachelor's degree tend to have higher wages. Workplaces that are most likely to offer marketing positions include grocery stores, warehouse clubs, gasoline stations with convenience stores, home centers, and wholesale goods businesses.

The work environment for these occupations varies by job responsibilities. While some workers have desk jobs and regular weekday schedules, others will need to be on their feet most of the time. Work in marketing and advertising can involve long work hours with pressure to be creative within short time frames to meet deadlines. People who work in this industry need strong persuasive and customer service skills.

CAREER RESEARCH

- **DECA**
deca.org
- **American Association of Advertising Agencies**
aaaa.org
- **Insurance Vocational Education Student Training**
investprogram.org
- **International Association of Business Communicators**
iabc.com
- **New Mexico American Marketing Association**
<http://www.nmama.org>
- **Learn How to Become**
<https://www.learnhowtobecome.org/finance-business-careers/marketing/>
- **Career Profiles: Career and Job Search Guide – Advertising, Marketing, and Sales Associations**
<http://www.careerprofiles.info/advertising-marketing-associations.html>
- **New Mexico Department of Workforce Solutions**
<https://www.jobs.state.nm.us>

Find more Marketing, Sales & Service occupations at oneline.org/find/career?c=14



Core Skills

- Persuasion
- Negotiation
- Service Orientation
- Management of Financial Resources
- Social Perceptiveness
- Speaking
- Mathematics
- Active Listening
- Management of Material Resources
- Coordination



Merchandising Pathway

Occupation

- **Business & Financial Operations**
Purchasing Agents, Except Wholesale, Retail & Farm Products; Wholesale & Retail Buyers, Except Farm Products
- **Office & Administrative Support**
Customer Service Reps; Office Clerks, General; Order Clerks; Procurement Clerks
- **Sales & Sales Related**
Retail Salespersons; Sales Reps, Wholesale & Manufacturing, Except Technical & Scientific Products; Counter & Rental Clerks; Telemarketers
- **Transportation & Material Moving**
Parking Lot Attendants



Marketing Research Pathway

Occupation

- **Business & Financial Operations**
Market Research Analysts & Marketing Specialists
- **Education, Training & Library**
Business Teachers, Postsecondary
- **Management**
Marketing Managers

Professional Sales Pathway

Occupation

- **Arts, Design, Entertainment, Sports & Media**
Merchandise Displayers & Window Trimmers; Interior Designers; Floral Designers
- **Business & Financial Operations**
Wholesale & Retail Buyers, Except Farm Products; Meeting, Convention & Event Planners; Appraisers & Assessors of Real Estate
- **Management**
Marketing Managers; Property, Real Estate & Community Association Managers; Lodging Managers
- **Office & Administrative Support**
Stock Clerks & Order Fillers; Reservation & Transportation Ticket Agents & Travel Clerks
- **Sales & Related**
Retail Salespersons; First-Line Supervisors of Retail Sales Workers; Sales Reps, Wholesale & Manufacturing, Except Technical & Scientific Products; Other Sales Reps, Services; First-Line Supervisors of Non-Retail Sales Workers; Counter & Rental Clerks; Real Estate Brokers; Sales Reps, Wholesale & Manufacturing, Technical & Scientific Products; Real Estate Brokers; Parts Salespersons; Telemarketers; Other Sales & Related Workers; Demonstrators & Product Promoters Sales Engineers; Door-to-Door Sales Workers; News & Street Vendors & Related Workers
- **Transportation & Material Moving**
Drivers/Sales Workers

Marketing Communications Pathway

Occupation

- **Management**
Sales Managers; Account Executives; Advertising Managers; Contract Administrators; Promotions Managers; Public Relations Managers

Marketing Management Pathway

Occupation

- **Management**
Inventory Manager/Analyst; Logistics Manager; Forecasting Manager





Selected Careers

Occupation ¹	Career Pathway	Job Description
Advertising and Promotions Managers	<ul style="list-style-type: none"> Management & Entrepreneurship 	Plan, direct, or coordinate advertising policies and programs or produce collateral materials, such as posters, contests, coupons, or giveaways to create extra interest in the purchase of a product or service.
Customer Service Representatives	<ul style="list-style-type: none"> Buying & Merchandising 	Interact with customers to provide information in response to inquiries about products and services and to handle and resolve complaints.
Supervisors of Non-Retail Sales Workers	<ul style="list-style-type: none"> Professional Sales & Marketing 	Directly supervise and coordinate activities of sales workers who are not involved in retail sales. May also perform duties like budgeting, accounting, and personnel work.
Market Research Analysts and Marketing Specialists	<ul style="list-style-type: none"> Marketing Information Management & Research 	Research market conditions in local, regional, or national areas. Gather information to determine potential sales of a product or service or create a marketing campaign. May gather information about competitors, prices, sales, and methods of marketing and distribution.
Marketing Managers	<ul style="list-style-type: none"> Management & Entrepreneurship Marketing Information Management & Research Professional Sales & Marketing 	Plan, direct, or coordinate marketing programs that generate interest in a specific product. Determine demand for products and services and monitor market trends. May identify potential customers. Develop pricing plans that maximize firm's profits while also keeping customers satisfied.
Retail Salespersons	<ul style="list-style-type: none"> Professional Sales & Marketing 	Sell merchandise, such as furniture, motor vehicles, appliances, or apparel to consumers
Supervisors of Retail Sales Workers	<ul style="list-style-type: none"> Professional Sales & Marketing 	Directly supervise and coordinate activities of retail sales workers in an establishment or department. Duties may include management functions, such as purchasing, budgeting, accounting, and personnel work, in addition to supervisory duties.
Sales Managers	<ul style="list-style-type: none"> Management & Entrepreneurship Marketing Communications & Promotion 	Set sales goals, analyze data, and develop training programs for organizations' sales representatives. Coordinate sales distribution by setting up sales territories. Determine sales potential and inventory needs. Monitor customer preferences.
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	<ul style="list-style-type: none"> Professional Sales & Marketing 	Sell goods for wholesalers or manufacturers using technical or scientific knowledge of fields like biology, engineering, chemistry, and electronics. Contact customers, explain product features, answer customers' questions, and negotiate prices.
Search Marketing Strategists	<ul style="list-style-type: none"> Professional Sales & Marketing 	Employ search marketing tactics to increase visibility and engagement with content, products, or services in Internet-enabled devices or interfaces. Examine search query behaviors on general or specialty search engines or other Internet-based content. Analyze research, data, or technology to understand user intent and measure outcomes for ongoing optimization.

Source: Information about occupations, career pathways, job descriptions, and interests is from O*NET OnLine onetonline.org data for annual openings, growth, and wages are based on the statewide 2012-2022 Occupational Projections prepared by the New Mexico Department of Workforce Solutions at <https://www.jobs.state.nm.us/vosnet/lmi/default.aspx?pu=1&plang=E>.

Notes:

- The table lists a sampling of occupations that represent careers in each pathway. For a full list of occupations, go to O*NET OnLine at <http://www.onetonline.org/find/career?c=1>



Annual Average Openings ²	Growth Plus Replacement Needs in NM	NM Entry Annual Wage ³	NM Median Annual Wage ³	Minimum Education ⁴	Interest ⁵
3	Neutral	\$47,370	\$61,220	High	E and C
434	Neutral	\$22,270	\$28,970	Low	E, S and C
15	Neutral	\$36,650	\$57,790	Middle	E, C and S
27	Growing	\$34,170	\$52,440	High	I, E and C
11	Neutral	\$50,390	\$80,330	High	E and C
1,183	Neutral	\$18,070	\$23,030	Low	E and C
313	Neutral	\$25,730	\$36,250	Low	E, C and S
35	Neutral	\$61,020	\$89,940	High	E and C
27	Neutral	\$33,890	\$48,800	Middle	E and C
18	Neutral	\$48,140	\$74,780	High	E, I and C

2. Growth Plus Replacement Needs in NM includes the total number of jobs available due to growth and replacement needs per year.

3. The Occupational Employment Statistics OES program of the Bureau of Labor Statistics produces estimates of wages paid to employees in each occupation. These occupational wage estimates are either mean wages or percentiles. The mean of the first third of the wage distribution is used as a proxy for the entry wage. A percentile wage is a boundary. An occupational median wage (50th percentile) estimate is the boundary between the highest paid 50 percent and the lowest paid 50 percent of workers in that occupation. Half of the workers in each occupation earn more than the median wage, and half the workers earn less than the median wage.

4. Minimum Education Requirements for occupations are determined by the U.S. Bureau of Labor Statistics <http://www.bls.gov>. High Education = Doctoral or Professional Degree, Master's Degree, Bachelor's Degree; Middle Education = Associate's Degree, Postsecondary Certification; Low Education = Some College - No Degree, High School Diploma or Equivalent, Less than High School.

5. There are six interest types Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E), and Conventional (C). Discover your work-related interests on pages 5-8 to find out which types you are most like and the careers that best fit you.



Career Readiness Benchmarks for Marketing Careers

The combined ACT WorkKeys skills benchmarks indicate that, across the low and high education groups, Level 5 is the lowest level of Locating Information, Applied Mathematics, and Reading for Information skills needed for Marketing careers. The scores shown for the middle education group is the average for the three careers listed for that category on p122.

Education Group	Applied Mathematics Range (3-7)	Reading for Information Range (3-7)	Locating Information Range (3-6)
SKILL LEVEL REQUIRED FOR 85% OF OCCUPATIONS			
Low Education Occupations	5	5	5
Middle Education Occupations	3	4	4
High Education Occupations	6	5	6



Workforce Certifications:

Note: Students successfully exiting a course of study in the Marketing, Sales and Service Cluster may be eligible to earn some or all of these certifications.

Precision Exams:

- Entrepreneurship
- Interpersonal Relationships

DECA School-based Enterprise:

- Hospitality
- Individual Certification

Precision Exams:

- Exploring Business and Marketing

Recommended Fourth Year of Mathematics Courses

- Marketing Management Pathway - Pre-Calculus
- Professional Sales Pathway - Pre-Calculus
- Merchandising Pathway - Pre-Calculus
- Marketing Communications Pathway - Pre-Calculus
- Marketing Research Pathway - Pre-Calculus



Postsecondary Programs, Degrees, and Colleges

Occupation	Postsecondary Program Name	NM Postsecondary School	Postsecondary Program Name	NM Postsecondary School
Advertising and Promotions Managers	Marketing/Marketing Management, General	University of the Southwest; New Mexico State University-Main Campus; Eastern New Mexico University-Roswell Campus; Diné College; Institute of American Indian Arts		
Customer Service Representatives	Certification: Accredited Customer Service Representative	Certified by: The Institutes	Certification: National Professional Certification in Customer Service	Certified by: National Retail Federation Foundation
First-Line Supervisors of Non-Retail Sales Workers	Office Management and Supervision	Clovis Community College; Eastern New Mexico University-Roswell Campus; Northern New Mexico College; Western New Mexico University		
Market Research Analysts and Marketing Specialists	Marketing/Marketing Management, General	University of the Southwest; New Mexico State University-Main Campus; Eastern New Mexico University-Roswell Campus		
Marketing Managers	Marketing/Marketing Management, General	New Mexico State University-Main Campus; Eastern New Mexico University-Roswell Campus; Diné College		
Online Merchants	E-Commerce/Electronic Commerce	Western New Mexico University		
First-Line Supervisors of Retail Sales Workers	Retailing and Retail Operations	New Mexico State University-Doña Ana; Eastern New Mexico University-Roswell Campus		
Sales Managers	Business Administration and Management, General	New Mexico Highlands University; Western New Mexico University; Eastern New Mexico University-Main Campus	Business/Commerce, General	Western New Mexico University; New Mexico State University-Main Campus
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	Marketing/Marketing Management, General	New Mexico State University-Main Campus; Eastern New Mexico University-Roswell Campus		
Search Marketing Strategists	Computer Science	New Mexico Institute of Mining and Technology	Bioinformatics	New Mexico State University-Main Campus

Note: The schools listed on this page are a representative sampling of schools that offer the course of studies shown here. Please contact New Mexico colleges directly for more current and relevant offerings.



High School Gets You Ready for College and Career

Common Career Technical Core for Marketing Career Cluster¹:

1. Describe the impact of economics, economics systems and entrepreneurship on marketing.
2. Implement marketing research to obtain and evaluate information for the creation of a marketing plan.
3. Plan, monitor, manage and maintain the use of financial resources for marketing activities.
4. Plan, monitor and manage the day-to-day activities required for continued marketing business operations.
5. Describe career opportunities and the means to achieve those opportunities in each of the Marketing Career Pathways.
6. Select, monitor and manage sales and distribution channels.
7. Determine and adjust prices to maximize return while maintaining customer perception of value.
8. Obtain, develop, maintain and improve a product or service mix in response to market opportunities.
9. Communicate information about products, services, images and/or ideas to achieve a desired outcome.
10. Use marketing strategies and processes to determine and meet client needs and wants.

Recommended Program of Study²

	9th Grade	10th Grade	11th Grade	12th Grade
Marketing Management	1802 Principals of Marketing	1850 Business Communications	1022 Technical Writing	Dual Credit in Marketing

Other Programs of Study Course Sequences³

	9th Grade	10th Grade	11th Grade	12th Grade
Professional Sales	1801 Basic Management Concepts	1802 Principles of Marketing - Fundamentals	1830 Principals of Marketing - Advanced	1825 Principles of Selling
Marketing Communications	1802 Principles of Marketing - Fundamentals	1850 Business Communications	1826 Marketing Management	1830 Principals of Marketing - Advanced
Marketing Research	0221 Introductory Business	1802 Principles of Marketing - Fundamentals	1830 Principals of Marketing - Advanced	1834 Marketing Research
Merchandising	0221 Introductory Business	1802 Principles of Marketing - Fundamentals	1814 Retail Marketing	1830 Principals of Marketing - Advanced

1. It is expected that a student completing any Programs of Study in this Career Cluster would transition to postsecondary college and career being able to know and do each of these Standards, unless otherwise noted.

2. The PED recommends the Program of Study here based on rigor of the course, quality curriculum and course resources, relevant to State workforce needs, and a capstone class, dual credit course, or AP course and exam.

3. It is expected that a student completing these Programs of Study would transition to postsecondary prepared for college and career.

Note: The course numbers are from the State Teacher Accountability Reporting System (STARS). Examine your school's course catalog for corresponding course.



Science, Technology, Engineering & Mathematics

The Science, Technology, Engineering, and Mathematics STEM career cluster includes as many as 184 occupations. What do they have in common? Workers in these careers use scientific, technological, engineering, and or mathematical processes to do research and solve problems. The problems they approach are as different as growing enough food, reducing our reliance on fossil fuels, developing medicines to treat mental illness, and creating computers that enhance our lives. Their career focus can be as small as a nanoparticle or as large as the universe.

Work settings vary with the topic of STEM research. While some jobs take place in front of a computer or in a laboratory, others require people to work in outdoor environments. Schedules also depend on the focus of STEM workers' research. Some individuals have very regular hours, but others' schedules depend upon availability of the subject they analyze. Employers who are likely to hire STEM qualified workers include engineering companies; the federal, state, and local government; scientific research companies; colleges and universities; and medical device manufacturers.

More than any of the other clusters, many STEM careers require at least an Associates degree or higher. Most occupations require a bachelor's degree, and some workers need master's or doctoral level credentials for a significant number of jobs. Typical educational backgrounds for entry into five occupations that are projected to have the most new jobs in New Mexico include:

- Market Research Analysts and Marketing Specialists - Bachelor's degree
- Applications Software Developers - Bachelor's degree
- Computer User Support Specialists – Some college, no degree
- Health Specialties Teachers - Doctoral or professional degree
- Civil Engineers – Bachelor's degree

CAREER RESEARCH

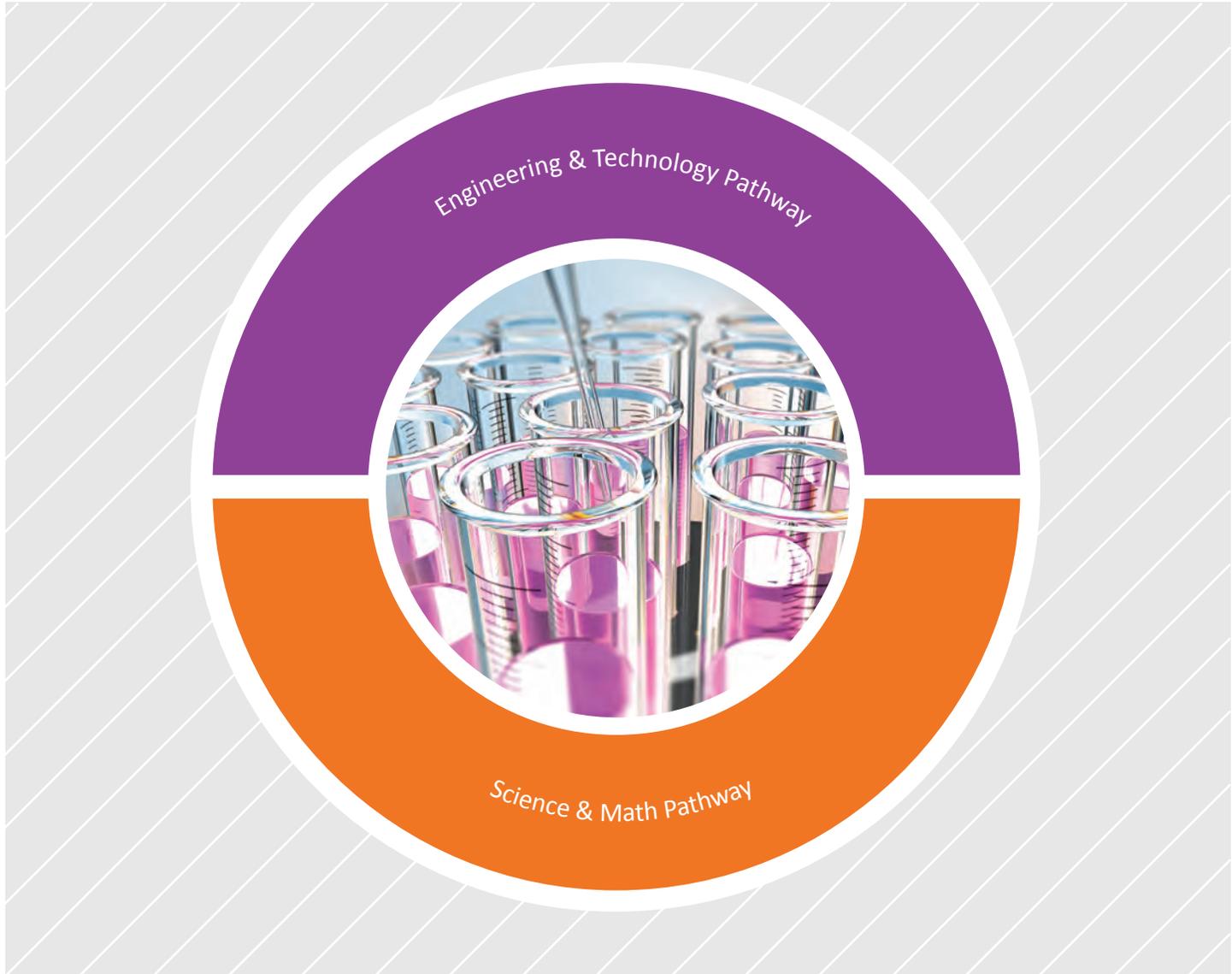
- **National Center for Women & Information Technology**
ncwit.org
- **Society for Industrial and Applied Mathematics**
siam.org
- **National Oceanic and Atmospheric Administration**
noaa.gov
- **Technology Student Association (TSA)**
tsaweb.org
- **New Mexico Biotechnology & Biomedical Association**
nmbio.org
- **Careers in Math**
coolmath.com/careers
- **New Scientist**
jobs.newscientist.com/searchjobs
- **Institute of Electrical and Electronics Engineers**
careers.ieee.org
- **National Science Foundation**
nsf.org
- **SREB Advanced Career**
<https://sreb.org/advanced-career>
- **Project Lead the Way Engineering**
<https://pltw.org/our-programs>
- **New Mexico Department of Workforce Solutions**
<https://www.jobs.state.nm.us>

Find more Science, Technology, Engineering & Mathematics occupations at
onetonline.org/find/career?c=15



Core Skills

- Science
- Programming
- Mathematics
- Technology Design
- Operations Analysis
- Systems Analysis
- Systems Evaluation
- Writing
- Reading Comprehension
- Complex Problem Solving



Engineering & Technology Pathway

• Architecture & Engineering

Civil Engineers; Industrial Engineers; Mechanical Engineers; Electrical Engineers; Electronics Engineers, Except Computer; Surveying & Mapping Technicians; Electrical & Electronic Engineering Technicians; Architectural & Civil Drafter; Other Engineers; Environmental Engineers; Computer Hardware Engineers; Industrial Engineering Technicians; Other Engineering Technicians, Except Drafters; Chemical Engineers; Electrical & Electronic Drafters; Aerospace Engineers; Biomedical Engineers; Health & Safety Engineers, Except Mining Safety Engineers & Inspectors

• Arts, Design, Entertainment, Sports & Media

Technical Writers

• Business & Financial Operations

Cost Estimators

• Education, Training & Library

Other Education, Training & Library Workers; Engineering Teachers, Postsecondary

• Management

Architectural & Engineering Managers

Occupation



Science & Math Pathway

Occupation

- **Architecture & Engineering**
Cartographers & Photogrammetrists
- **Business & Financial Operations**
Market Research Analysts & Marketing Specialists
- **Community & Social Service**
Other Community & Social Service Specialists
- **Management**
Software Developers, Applications; Computer User Support Specialists; Computer Programmers; Other Computer Occupations; Statisticians
- **Education, Training & Library**
Health Specialties Teachers, Postsecondary; Other Education, Training & Library Workers; Vocational Education Teachers, Postsecondary; Biological Science Teachers, Postsecondary; Mathematical Science Teachers, Postsecondary; History Teachers, Postsecondary; Philosophy & Religion Teachers, Postsecondary; Chemistry Teachers, Postsecondary; Engineering Teachers, Postsecondary; Political Science Teachers, Postsecondary; Curators; Physics Teachers, Postsecondary; Economics Teachers, Postsecondary
- **Healthcare Practitioners & Technicians**
Family & General Practitioners; Dietitians & Nutritionists
- **Life, Physical & Social Science**
Environmental Scientists & Specialists, Including Health; Medical Scientists, Except Epidemiologists; Chemists; Chemical Technicians; Biological Technicians; Other Physical Scientists; Social Science Research Assistants; Other Life Scientists; Other Biological Scientists; Other Social Scientists & Related Workers; Agricultural & Food Science Technicians; Geoscientists, Except Hydrologists & Geographers; Other Life, Physical & Social Science Technicians; Zoologists & Wildlife Biologists; Biochemists & Biophysicists; Microbiologists; Survey Researchers; Conservation Scientists; Material Scientists; Economists
- **Management**
Architectural & Engineering Managers; Natural Science Managers





Selected Careers

Occupation ¹	Career Pathway	Job Description
Mechanical Engineers	<ul style="list-style-type: none"> Engineering & Technology 	Perform engineering duties in planning and designing tools, engines, machines, and other mechanically functioning equipment. Oversee installation, operation, maintenance, and repair of equipment such as centralized heat, gas, water, and steam systems.
Chemical Technicians	<ul style="list-style-type: none"> Science & Math 	Use special tools and techniques to do chemical and physical laboratory tests that help scientists analyze solids, liquids and gaseous materials. Results are used for further research and for making new products or processes. Testing also helps with quality control and maintaining environmental standards.
Civil Engineering Technicians	<ul style="list-style-type: none"> Engineering & Technology 	Apply theory and principles of civil engineering in planning, designing, and overseeing construction and maintenance of structures and facilities under the direction of engineering staff or physical scientists.
Civil Engineers	<ul style="list-style-type: none"> Engineering & Technology 	Use engineering skills to plan, design, and oversee construction and maintenance of buildings and facilities. Project examples include roads, railroads, airports, bridges, harbors, channels, dams, irrigation projects, pipelines, power plants, and water and sewage systems.
Electrical Engineering Technicians	<ul style="list-style-type: none"> Engineering & Technology 	Use electrical and electronic knowledge to help engineers design and develop products like computers, communications equipment, and medical monitoring devices. May design, build, repair, adjust, and modify electrical components, circuitry, controls, and machinery.
Electrical Engineers	<ul style="list-style-type: none"> Engineering & Technology 	Research, design, develop, test, or supervise the manufacture and installation of electrical equipment like electric motors, radar and navigation systems, and power generation equipment. Equipment may be used for commercial, industrial, military, or scientific purposes.
Photonics Engineers	<ul style="list-style-type: none"> Engineering & Technology 	Research, design, develop, or test electronic components and systems for commercial, industrial, military, or scientific use employing knowledge of electronic theory and materials properties. Design electronic circuits and components for use in fields such as telecommunications, aerospace guidance and propulsion control, acoustics, or instruments and controls.
Physicists	<ul style="list-style-type: none"> Science & Math 	Conduct research into physical phenomena, develop theories on the basis of observation and experiments, and devise methods to apply physical laws and theories.
Medical Scientists	<ul style="list-style-type: none"> Science & Math 	Conduct research aimed at improving overall human health. Engage in clinical trials, research and development, or related activities. Includes physicians, dentists, public health specialists, pharmacologists, and medical pathologists who focus on research.
Statisticians	<ul style="list-style-type: none"> Science & Math 	Use mathematical or statistical theory and methods to collect, organize, interpret, and summarize numerical data to provide accurate information. May specialize in fields such as bio-statistics, agricultural statistics, business statistics, or economic statistics. Includes mathematical and survey statisticians.

Source: Information about occupations, career pathways, job descriptions, and interests is from O*NET OnLine [onetonline.org](https://www.onetonline.org) data for annual openings, growth, and wages are based on the statewide 2012-2022 Occupational Projections prepared by the New Mexico Department of Workforce Solutions at <https://www.jobs.state.nm.us/vosnet/lmi/default.aspx?pu=1&plang=E>.

Notes:

- The table lists a sampling of occupations that represent careers in each pathway. For a full list of occupations, go to O*NET OnLine at <http://www.onetonline.org/find/career?c=1>



Annual Average Openings ²	Growth Plus Replacement Needs in NM	NM Entry Annual Wage ³	NM Median Annual Wage ³	Minimum Education ⁴	Interest ⁵
39	Neutral	\$74,430	\$109,750	High	I, R and C
7	Neutral	\$30,380	\$42,630	Middle	S, I and R
15	Neutral	\$34,100	\$40,590	Middle	R, C and I
37	Neutral	\$59,660	\$86,540	High	I, R and C
38	Neutral	\$41,680	\$63,850	Middle	R, I and C
30	Neutral	\$57,480	\$101,010	High	I and R
97	Neutral	\$61,640	\$106,130	High	I and R
27	Neutral	\$112,060	\$146,040	High	I and R
14	Neutral	\$48,830	\$69,380	High	I and R
3	Growing	\$41,470	\$71,420	High	I, C and E

2. Growth Plus Replacement Needs in NM includes the total number of jobs available due to growth and replacement needs per year.

3. The Occupational Employment Statistics OES program of the Bureau of Labor Statistics produces estimates of wages paid to employees in each occupation. These occupational wage estimates are either mean wages or percentiles. The mean of the first third of the wage distribution is used as a proxy for the entry wage. A percentile wage is a boundary. An occupational median wage (50th percentile) estimate is the boundary between the highest paid 50 percent and the lowest paid 50 percent of workers in that occupation. Half of the workers in each occupation earn more than the median wage, and half the workers earn less than the median wage.

4. Minimum Education Requirements for occupations are determined by the U.S. Bureau of Labor Statistics <http://www.bls.gov>. High Education = Doctoral or Professional Degree, Master's Degree, Bachelor's Degree; Middle Education = Associate's Degree, Postsecondary Certification; Low Education = Some College - No Degree, High School Diploma or Equivalent, Less than High School.

5. There are six interest types Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E), and Conventional (C). Discover your work-related interests on pages 5-8 to find out which types you are most like and the careers that best fit you.



Career Readiness Benchmarks for Science, Technology, Engineering & Mathematics Careers

The combined ACT WorkKeys skills benchmarks indicate that, across the middle and high education groups, Level 5 is the lowest level of Applied Mathematics, Locating Information, and Reading for Information skills needed for jobs in the STEM career cluster.

Education Group	Applied Mathematics Range (3-7)	Reading for Information Range (3-7)	Locating Information Range (3-6)
SKILL LEVEL REQUIRED FOR 85% OF OCCUPATIONS			
Low Education Occupations	NA	NA	NA
Middle Education Occupations	5	5	5
High Education Occupations	6	5	5

Career Technical Student Organization











Workforce Certifications:

Note: Students successfully exiting a course of study in the Science, Technology, Engineering & Mathematics Cluster may be eligible to earn some or all of these certifications.

- Precision Exams Certification:**
- Foundations of Technology
 - Certificate in Biofuels

- ### Recommended Fourth Year of Mathematics Courses
- Engineering & Technology Pathway - Pre/Calculus/Calculus
 - Science & Mathematics Pathway - Pre/Calculus/Calculus



Postsecondary Programs, Degrees, and Colleges

Occupation	Postsecondary Program Name	NM Postsecondary School	Postsecondary Program Name	NM Postsecondary School
Mechanical Engineers	Mechanical Engineering	New Mexico Institute of Mining and Technology; New Mexico State University-Main Campus; University of New Mexico-Main Campus		
Chemical Technicians	Chemical Technician	Navajo Technical University; New Mexico State University-Doña Ana; San Juan College; Central New Mexico Community College		
Civil Engineering Technicians	Construction Engineering Technology/ Technician	Santa Fe Community College	Building Construction Technology	Central New Mexico Community College
Civil Engineers	Civil Engineering, General	New Mexico State University-Main Campus; University of New Mexico-Main Campus; New Mexico Institute of Mining and Technology		
Electrical Engineering Technicians	Electrical, Electronic and Communications Engineering Technology/ Technician	Central New Mexico Community College; New Mexico State University-Doña Ana; Clovis Community College; Western New Mexico University	Computer Engineering Technology/ Technician	Northern New Mexico College; University of New Mexico-Valencia County Campus
Electrical Engineers	Electrical and Electronics Engineering	New Mexico State University-Main Campus; University of New Mexico-Main Campus; New Mexico Institute of Mining and Technology; New Mexico Highlands University		
Photonics Engineers	Engineering, General	New Mexico State University-Main Campus	Manufacturing Engineering	University of New Mexico-Main Campus
Physicists	Physics, General	New Mexico Institute of Mining and Technology; New Mexico Highlands University; San Juan College; University of New Mexico-Main Campus; New Mexico State University-Main Campus; Central New Mexico Community College	Engineering Physics/Applied Physics	New Mexico State University-Main Campus
Medical Scientists, Except Epidemiologists	Biochemistry	Eastern New Mexico University-Main Campus; University of New Mexico-Main Campus; New Mexico State University-Main Campus		
Statisticians	Mathematics, General	Eastern New Mexico University-Main Campus; New Mexico Highlands University; University of New Mexico-Main Campus; New Mexico Institute of Mining and Technology; New Mexico State University-Main Campus	Statistics, General	University of New Mexico-Main Campus; New Mexico State University-Main Campus

Note: The schools listed on this page are a representative sampling of schools that offer the course of studies shown here. Please contact New Mexico colleges directly for more current and relevant offerings.



High School Gets You Ready for College and Career

Common Career Technical Core for Science, Technology, Engineering & Mathematics Career Cluster¹:

1. Apply engineering skills in a project that requires project management, process control and quality assurance.
2. Use technology to acquire, manipulate, analyze and report data.
3. Describe and follow safety, health and environmental standards related to science, technology, engineering and mathematics (STEM) workplaces.
4. Understand the nature and scope of the STEM Career Cluster and the role of STEM in society and the economy.
5. Demonstrate an understanding of the breadth of career opportunities and means to those opportunities in each of the STEM Career Pathways.
6. Demonstrate technical skills needed in a chosen STEM field.

Recommended Programs of Study²

	9th Grade	10th Grade	11th Grade	12th Grade
Engineering & Technology Project Lead the Way: Engineering	1615 Introduction to Engineering Design	1617 Principles of Engineering	A Project Lead the Way course - or - 1739 AP Physics 1	1620 Engineering Design and Development -OR- 1740 AP Physics 2
Engineering & Technology SREB Advanced Careers: Energy and Power	1670 Nature of Science and Technology	1671 Core Applications of Science and Technology	1672 Impacts of Science and Technology	1673 Creativity and Innovations
Aerospace Engineering SREB Advanced Careers: Aerospace Technology	1674 Fundamentals of Aerospace Technology	1675 Advanced Aerospace Technology	1676 Aeronautics Engineering Applications	1677 Astronautics Engineering Applications
Science & Mathematics	1626 Emergent Technologies	1783 Science Technology	1739 AP Physics	2039 Fractal Mathematics
Science & Mathematics SREB Advanced Careers: Clean Energy	1678 Clean Energy Systems	1679 Clean Energy Applications	1680 Clean Energy Strategies	1681 Clean Energy Innovations

Other Program of Study Course Sequence³

	9th Grade	10th Grade	11th Grade	12th Grade
Engineering & Technology: Mechanical Design Drafting	0706 Drafting Technical/Mechanical	703 Drafting-Architectural	0718 Computers and Engineering II	0719 Computers and Engineering III

1. It is expected that a student completing any Programs of Study in this Career Cluster would transition to postsecondary college and career being able to know and do each of these Standards, unless otherwise noted.
2. The PED recommends the Program of Study here based on rigor of the course, quality curriculum and course resources, relevant to State workforce needs, and a capstone class, dual credit course, or AP course and exam.
3. It is expected that a student completing these Programs of Study would transition to postsecondary prepared for college and career.

Note: The course numbers are from the State Teacher Accountability Reporting System (STARS). Examine your school's course catalog for corresponding course.



Transportation, Distribution & Logistics

Transportation keeps our economy, people, and products moving. Occupations involved in transporting, distributing, and coordinating the movement of goods range from airline pilots to mechanics to logisticians. Additionally, this cluster includes occupations related to warehouse storage, including jobs like cargo and freight agents; supervisors; and non-emergency dispatchers.

The majority of this career cluster's work takes place on the ground via highways and railroads, but it also includes workers who move people and products over the water and through the air. Work environments vary by occupation. While some truck drivers may work long hours and travel large distances, people who work in warehouses are more likely to work eight hour shifts. Physical strength is necessary for some jobs, while word processing and spreadsheet skills are priorities in other occupations.

For the Transportation, Distribution and Logistics career cluster, the greatest number of new jobs in New Mexico are projected to include heavy and tractor-trailer truck drivers; freight laborers, stock, and material movers; operating engineers and other construction equipment operators; and heavy diesel mechanics. Many jobs require a high school education, but postsecondary education, usually no higher than a bachelor's degree, is needed for some occupations. Workers may often find jobs in temporary service agencies, long distance freight trucking businesses, new car dealerships, warehouse and storage facilities, and express delivery companies.

CAREER RESEARCH

- **American Trucking Associations**
trucking.org
- **Global Cold Chain Alliance**
gcca.org
- **Taxicab, Limousine and Paratransit Association**
tlpa.org
- **Association of American Railroads**
aar.org
- **Airlines for America**
airlines.org
- **SkillsUSA**
skillsusa.org
- **Jobs in Motion**
jobsinmotion.com
- **New Mexico Department of Workforce Solutions**
<https://www.jobs.state.nm.us>

Find more Transportation, Distribution
& Logistics occupations at
oneline.org/find/career?c=16



Core Skills

- Repairing
- Equipment Maintenance
- Operation & Control
- Troubleshooting
- Operation Monitoring
- Equipment Selection
- Quality Control Analysis
- Installation
- Management of Material Resources
- Monitoring



Sales & Service Pathway

Occupation

- Office & Administrative Support
First-Line Supervisors of Office & Administrative Support Workers; Billing & Posting Clerks; Reservation & Transportation Ticket Agents & Travel Clerks; Cargo & Freight Agents
- Sales & Related
Parts Salespersons

Logistics Planning & Management Services Pathway

Occupation

- Business & Financial Operations
Logisticians
- Management
Other Managers; Administrative Services Managers; Chief Executives



Facility & Mobile Equipment Maintenance Pathway

Occupation

- **Installation, Maintenance & Repair**
Automotive Service Technicians & Mechanics; Bus & Truck Mechanics & Diesel Engine Specialists; Automotive Body & Related Repairers; Aircraft Mechanics & Service Technicians; Other Installation, Maintenance & Repair Workers; Mobile Heavy Equipment Mechanics, Except Engines; Tire Repairers & Changers; Outdoor Power Equipment & Other Small Engine Mechanics; Automotive Glass Installers & Repairers; Avionics Technicians; Motorboat Mechanics & Service Technicians; Rail Car Repairers; Motorcycle Mechanics; Bicycle Repairers;

Recreational Vehicle Service Technicians

- **Production**
Painters; Transportation Equipment; Engine & Other Machine Assemblers

Transportation Operations Pathway

Occupation

- **Construction Extraction**
Operating Engineers & Other Construction Equipment Operators
- **Healthcare Practitioners & Technicians**
Occupational Health & Safety Specialists
- **Installation, Maintenance & Repair**
Automotive Service Technicians & Mechanics
- **Management**
Transportation, Storage & Distribution Managers
- **Office & Administrative Support**
Dispatchers, Except Police, Fire & Ambulance
- **Production**
Print Binding & Finishing Workers

- **Transportation & Material Moving**
Manual Laborers & Freight, Stocks & Material Movers; Heavy & Tractor-Trailer Truck Drivers; Light Truck or Delivery Services Drivers; Bus Drivers, School or Special Client; Industrial Truck & Tractor Operators; First-Line Supervisors of Transportation & Material-Moving Machine & Vehicle Operators; First-Line Supervisors of Helpers, Laborers & Material Movers, Hand; Bus Drivers, Transit & Intercity; Parking Lot Attendants; Excavating & Loading Machine & Dragline Operators; Crane & Tower Operators; Other Transportation Workers; Commercial Pilots; Railroad Conductors & Yardmasters; Air Traffic Controllers; Ambulance Drivers & Attendants, Except Emergency Medical Technicians; Captains, Mates & Pilots of Water Vessels; Transportation Inspectors

Warehousing & Distribution Center Operations Pathway

Occupation

- **Office & Administrative Support**
Shipping, Receiving & Traffic Clerks; Production, Planning & Expediting Clerks

- **Transportation & Material Moving**
Laborers & Freight, Stock & Material Movers, Hand; First-Line Supervisors of Transportation & Material-Moving Machine & Vehicle Operators; First-Line Supervisors of Helpers, Laborers & Material Movers, Hand; Tank Car, Truck & Ship Loaders

Health, Safety & Environmental Management Pathway

Occupation

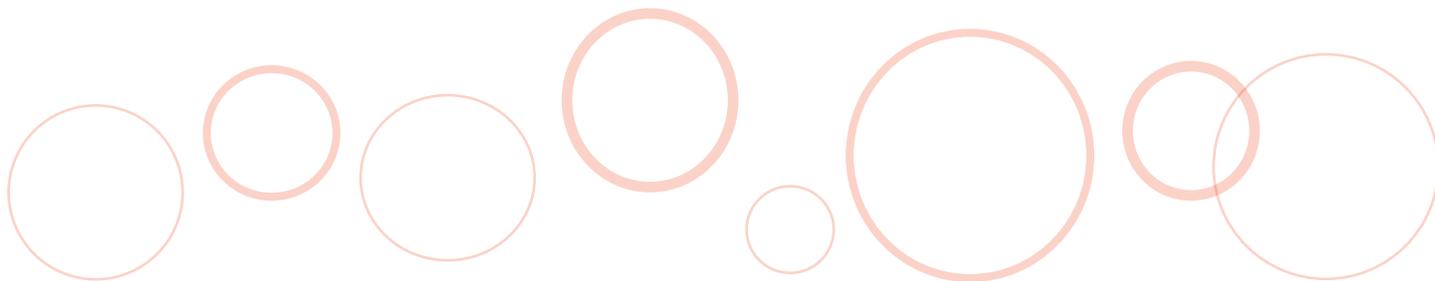
- **Engineering**
Industrial Safety and Health Engineers

Transportation Systems/Infrastructure Planning, Management & Regulation Pathway

Occupation

- **Transportation & Material Moving**
Aviation Inspectors, Freight & Cargo Inspectors, Traffic Technicians, Transportation Vehicle, Equipment & Systems Inspectors, Transportation Planners

- **Business & Financial Operations**
Customs Brokers





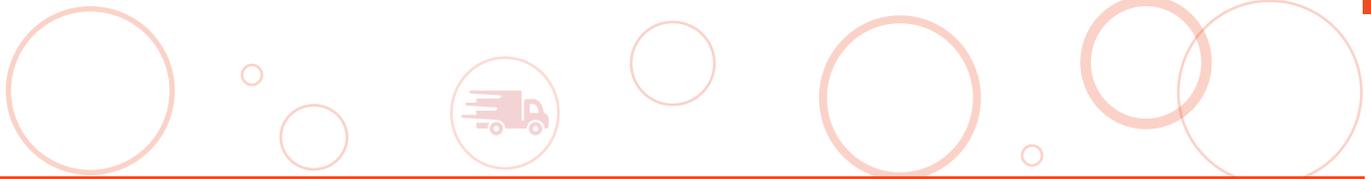
Selected Careers

Occupation ¹	Career Pathway	Job Description
Air Traffic Controllers	<ul style="list-style-type: none"> Transportation Operations 	Coordinate air traffic to make sure aircraft stay safe distances apart. Authorize, regulate, and control commercial airline flights following government or company regulations for safe and efficient flight.
Aircraft Mechanics and Service Technicians	<ul style="list-style-type: none"> Facility & Mobile Equipment Maintenance 	Diagnose, adjust, repair, or overhaul aircraft engines and assemblies like hydraulic and pneumatic systems. Includes helicopter and aircraft engine specialists.
Automotive Service Technicians and Mechanics	<ul style="list-style-type: none"> Transportation Operations 	Inspect, diagnose problems, adjust, repair, or overhaul automotive vehicles.
Bus and Truck Mechanics & Diesel Engine Specialists	<ul style="list-style-type: none"> Transportation Operations 	Diagnose, adjust, repair, or overhaul buses and trucks, or maintain and repair any type of diesel engines. Includes mechanics working primarily with automobile or marine diesel engines.
Cargo and Freight Agents	<ul style="list-style-type: none"> Sales and Service Warehousing & Distribution Center Operations 	Direct movement of cargo and freight shipments in airline, train, and trucking terminals and shipping docks. Take orders from customers and arrange pickup and delivery of products. Prepare and examine documents to determine shipping charges and tariffs.
Light Truck or Delivery Services Driver	<ul style="list-style-type: none"> Transportation Operations 	Drive a light vehicle, such as a truck or van, with a capacity of less than 26,000 pounds Gross Vehicle Weight (GVW), primarily to deliver or pick up merchandise or to deliver packages. May load and unload vehicle.
Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	<ul style="list-style-type: none"> Warehousing & Distribution Center Operations Transportation Operations 	Directly supervise and coordinate activities of transportation and material-moving machine and vehicle operators and helpers.
Heavy and Tractor-Trailer Truck Drivers	<ul style="list-style-type: none"> Transportation Operations 	Transport goods by driving a tractor-trailer combination or a truck with a capacity of at least 26,000 pounds Gross Vehicle Weight (GVW). May need to unload truck. Requires commercial driver's license.
Industrial Safety and Health Engineers	<ul style="list-style-type: none"> Health, Safety & Environmental Management 	Plan, implement, and coordinate safety programs, requiring application of engineering principles and technology, to prevent or correct unsafe environmental working conditions.
Logisticians	<ul style="list-style-type: none"> Logistics Planning & Management Services 	Analyze and coordinate an organization's system that moves a product from supplier to consumer. Manage the entire life cycle of a product, which includes how a product is acquired, distributed, allocated, and delivered.

Source: Information about occupations, career pathways, job descriptions, and interests is from O*NET OnLine [onetonline.org](https://www.onetonline.org) data for annual openings, growth, and wages are based on the statewide 2012-2022 Occupational Projections prepared by the New Mexico Department of Workforce Solutions at <https://www.jobs.state.nm.us/vosnet/lmi/default.aspx?pu=1&plang=E>.

Notes:

1. The table lists a sampling of occupations that represent careers in each pathway. For a full list of occupations, go to O*NET OnLine at <http://www.onetonline.org/find/career?c=1>



Annual Average Openings ²	Growth Plus Replacement Needs in NM	NM Entry Annual Wage ³	NM Median Annual Wage ³	Minimum Education ⁴	Interest ⁵
9	Neutral	\$78,120	\$121,910	Middle	E and C
15	Neutral	\$35,930	\$58,400	Middle	R, C and I
131	Neutral	\$23,080	\$34,640	Middle	R and I
52	Neutral	\$29,830	\$40,150	Low	R and C
5	Neutral	\$32,170	\$45,270	Low	C, E and R
144	Neutral	\$21,540	\$31,670	Low	C and E
50	Neutral	\$29,350	\$49,380	Low	R and C
234	Neutral	\$30,140	\$40,780	Low	E, C and R
9	Neutral	\$69,940	\$106,010	High	I, C and R
9	Neutral	\$51,550	\$75,180	High	E and C

2. Growth Plus Replacement Needs in NM includes the total number of jobs available due to growth and replacement needs per year.

3. The Occupational Employment Statistics OES program of the Bureau of Labor Statistics produces estimates of wages paid to employees in each occupation. These occupational wage estimates are either mean wages or percentiles. The mean of the first third of the wage distribution is used as a proxy for the entry wage. A percentile wage is a boundary. An occupational median wage (50th percentile) estimate is the boundary between the highest paid 50 percent and the lowest paid 50 percent of workers in that occupation. Half of the workers in each occupation earn more than the median wage, and half the workers earn less than the median wage.

4. Minimum Education Requirements for occupations are determined by the U.S. Bureau of Labor Statistics <http://www.bls.gov>. High Education = Doctoral or Professional Degree, Master's Degree, Bachelor's Degree; Middle Education = Associate's Degree, Postsecondary Certification; Low Education = Some College - No Degree, High School Diploma or Equivalent, Less than High School.

5. There are six interest types Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E), and Conventional (C). Discover your work-related interests on pages 5-8 to find out which types you are most like and the careers that best fit you.

Career Readiness Benchmarks for Transportation, Distribution & Logistics Careers

The combined ACT WorkKeys skills benchmarks indicate that, across education groups, Level 3 is the lowest level of Applied Mathematics and Reading for Information skills needed for the occupations on the previous pages in this career cluster.

Education Group	Applied Mathematics Range (3-7)	Reading for Information Range (3-7)	Locating Information Range (3-6)
SKILL LEVEL REQUIRED FOR 85% OF OCCUPATIONS			
Low Education Occupations	3	3	3
Middle Education Occupations	3	4	4
High Education Occupations	4	6	6

Career Technical Student Organization

Workforce Certifications:

Note: Students successfully exiting a course of study in the Transportation, Distribution and Logistics Cluster may be eligible to earn some or all of these certifications.

NATEF Credential

Precision Exams: Customer Service

Automotive Service Excellence (ASE) Certifications:

- Automotive Steering and Suspension
- Automotive Brakes
- Electrical
- Engine Performance

Recommended Fourth Year of Mathematics Courses

- Transportation Operations Pathway - Pre-Calculus
- Logistics Planning & Management Services Pathway - Pre-Calculus
- Warehousing & Distribution Center Operations Pathway - Pre-Calculus
- Facility & Mobile Equipment Maintenance Pathway - Pre-Calculus
- Transportation Systems/ Infrastructure Planning, Management & Regulation Pathway - Pre-Calculus
- Health, Safety & Environmental Management Pathway - Pre-Calculus
- Sales & Service Pathway - Pre-Calculus



Postsecondary Programs, Degrees, and Colleges

Occupation	Postsecondary Program Name	NM Postsecondary School
Air Traffic Controllers	Air Traffic Controller	Eastern New Mexico University-Roswell Campus
Aircraft Mechanics and Service Technicians	Airframe Mechanics and Aircraft Maintenance Technology/Technician	Central New Mexico Community College; Eastern New Mexico University-Roswell Campus
Automotive Service Technicians and Mechanics	Automobile/Automotive Mechanics Technology/Technician	University of New Mexico-Gallup Campus; New Mexico State University-Doña Ana; Northern New Mexico College; Central New Mexico Community College; Clovis Community College; Mesalands Community College; Santa Fe Community College; San Juan College
Bus and Truck Mechanics & Diesel Engine Specialists	Diesel Mechanics Technology/Technician	Central New Mexico Community College; San Juan College
Cargo and Freight Agents	General Office Occupations and Clerical Services	Central New Mexico Community College; Eastern New Mexico University-Roswell Campus
Light Truck or Delivery Services Driver	Truck and Bus Driver/Commercial Vehicle Operator and Instructor	San Juan College; New Mexico Junior College; Navajo Technical University; Central New Mexico Community College; Eastern New Mexico University-Roswell Campus
Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	Certification: Certified Supervisor of Maintenance/Equipment	Certified by: North American Transportation Management Institute
Heavy and Tractor-Trailer Truck Drivers	Truck and Bus Driver/Commercial Vehicle Operator and Instructor	San Juan College; New Mexico Junior College; Navajo Technical University; Central New Mexico Community College; Eastern New Mexico University-Roswell Campus
Industrial Safety & Health Engineers	Environmental/Environmental Health Engineering	New Mexico Institute of Mining and Technology; New Mexico State University-Main Campus
Logisticians	Operations Management and Supervision	Western New Mexico University; Clovis Community College; University of Phoenix-New Mexico

Note: The schools listed on this page are a representative sampling of schools that offer the course of studies shown here. Please contact New Mexico colleges directly for more current and relevant offerings.

High School Gets You Ready for College and Career

Common Career Technical Core for Transportation, Distribution & Logistics Career Cluster¹:

1. Describe the nature and scope of the Transportation, Distribution and Logistics Career Cluster and the role of transportation, distribution and logistics in society and the economy.
2. Describe the application and use of new and emerging advanced techniques to provide solutions for transportation, distribution and logistics problems.
3. Describe the key operational activities required of successful transportation, distribution and logistics facilities.
4. Identify governmental policies and procedures for transportation, distribution and logistics facilities.
5. Describe transportation, distribution and logistics employee rights and responsibilities and employer's obligations concerning occupational safety and health.
6. Describe career opportunities and means to achieve those opportunities in each of the Transportation, Distribution and Logistics Career Pathways.

Recommended Program of Study²

	9th Grade	10th Grade	11th Grade	12th Grade
Facility & Mobile Equipment	0902 Auto Technologies-Comprehensive	0920 Auto Tech 2	0921 Auto Tech 3	Dual Credit in Automotive Technology

Other Programs of Study Course Sequences³

	9th Grade	10th Grade	11th Grade	12th Grade
Transportation Operations	0911 Introduction to Transportation	0995 Transportation Technology	1805 Marketing-Transportation	Dual Credit in Operations Management
Transportation Systems/Infrastructure Planning, Management & Regulations	0911 Introduction to Transportation	0995 Transportation Technology	1625 Technology Systems	1805 Marketing-Transportation
Warehousing & Distribution Center Operations	0911 Introduction to Transportation	0995 Transportation Technology	1625 Technology Systems	Dual Credit in Operations Management
Sales & Service	0911 Introduction to Transportation	0995 Transportation Technology	1625 Technology Systems	Dual Credit in Automotive Technology
Logistics Planning & Management	0911 Introduction to Transportation	0995 Transportation Technology	1625 Technology Systems	Dual Credit in Operations Management
Health, Safety & Environmental Management	0911 Introduction To Transportation	0995 Transportation Technology	0912 Auto Technologies-Comprehensive	Dual Credit in Operations Management

1. It is expected that a student completing any Programs of Study in this Career Cluster would transition to postsecondary college and career being able to know and do each of these Standards, unless otherwise noted.
2. The PED recommends the Program of Study here based on rigor of the course, quality curriculum and course resources, relevant to State workforce needs, and a capstone class, dual credit course, or AP course and exam.
3. It is expected that a student completing these Programs of Study would transition to postsecondary prepared for college and career.

Note: The course numbers are from the State Teacher Accountability Reporting System (STARS). Examine your school's course catalog for corresponding course.



Experiencing Real Jobs

Getting experience while exploring career options will give you a head start on your future career. Take advantage of opportunities to “try out” a career through work-based learning programs, summer or part-time jobs, or as a community volunteer. Your local school or college will offer some or all of the programs noted here. You’ll find others by searching the Internet and by contacting community businesses and organizations. Work-based learning is also helpful if you want or need to change careers.

Here are a few ways you can get involved in work-based learning:

- **Job Shadowing** programs usually involve going to work for one or several days with someone whose career interests you. You can observe tasks and skills required for the job, experience the work environment, and interact with people who currently work in your potential career field.
- **Internships and Cooperative Education** experiences usually last for a couple of weeks to several months. You not only observe individuals in your career field of interest, but also get a chance to perform some of the job’s tasks and duties. Internships and Cooperative Education include mentoring by an experienced career professional who can discuss your career decisions and goals. Internships can be paid or unpaid, but Cooperative Education is an activity that must provide pay. Either program may be eligible for academic credit at a high school or college.
- **School-Based Enterprises** allow you to plan and run a simulated or actual business at school. It’s an experience that provides direct links between what you learn in the classroom and what it’s like to work in an actual job.
- **Apprenticeships** offer combined academic instruction, structured training, and paid work experience that usually last for one to two years. Employers offer these programs in collaboration with the New Mexico Department of Commerce.
- **Service Learning** can be a great way to learn about a career and help out your community while developing new skills or applying existing skills. You will see how the services you provide connect with what you’ve learned in classes.
- **Business/Industry Field Trips** are opportunities to leave the classroom to see how what you’ve learned applies in workplaces. You can observe and investigate activities that relate to a specific school subject and to your career plans.

Work-based learning opportunities give you the edge when applying for new jobs. Not only will you gain valuable work experience, but you’ll also meet people who can become part of your career network. They may be your best resource for meeting potential employers and other people who can provide job referrals. You’ll also find that these experiences can improve the quality of your resume!

Exploring the Job Market

Specific job requirements change from industry to industry, business to business, and hiring manager to hiring manager. Whether you're still planning your future career or getting ready to enter the job market, getting a well-rounded understanding of what employers are looking for in job candidates is always helpful. The more research you do in understanding job and employer requirements and preparing yourself to meet those needs, the better positioned you will be to land your dream job. Some steps you can take include:

- **Read job postings** – Get online and search to find what kinds of jobs are out there. Places to start include jobs.state.nm.us, wwwIndeed.com, and LinkedIn.com/Job.
- **Research the occupation** – Make sure you understand the occupation and its potential. The Bureau of Labor Statistics' Occupational Outlook Handbook (www.bls.gov/ooh) and CareerOneStop (www.careerinfonet.org/Occupations) have thorough descriptions of hundreds of occupations with data on wages and job growth.
- **Research the industry that interests you** – Whether you're preparing for an interview or just trying to better understand a career, learn what you can about the business's industry or occupations. By doing this, you will gain understanding of the opportunities and challenges in this field. Is it growing and successful? Are global or technological changes likely to affect future jobs in this industry? Search engines can help you find information. Look specifically for industry associations — either national or state chapters. In this Career Clusters Guide, the first page of each Career Cluster contains references to industry associations.
- **Find local employers** – Reviewing job postings will likely help you start to identify employers. However, remember that not all companies will be hiring at the moment and not all will post jobs online. Another way to find employers in your area is to use CareerOneStop's Employer Locator tool at careerinfonet.org/employerlocator/employerlocator.asp?nodeid=18. Or you can conduct a simple Google search for businesses in your town or city. Limiting your search to industries (advertising agencies, machine shops, medical clinics) may be more helpful than just looking for occupations (social media specialists, welders, nurses).
- **Research the company** – Before ever contacting a potential employer, do your homework and learn what the company does. The more you know about their business, the more impressive employers will find you when you talk with them. Start by reading the company's website and social media pages. If the business is especially large, it may post an annual report on its corporate website. Conduct a Google News search to gather other information about it.
- **Ask for an informational interview** – Talking directly with someone in the company is the best way to learn about what a business does and what the employer looks for in job candidates. Check with friends and other people that you or your family know to see if someone could introduce you to a company employee. If no one within your network is familiar with the business, call it directly. Explain that you would like to know more about the company and its jobs. If you're patient and polite, employers will often find 20-30 minutes to meet and talk with a student or someone who wants to get into their line of work. Make sure you come prepared with questions, don't ask for a job, and be respectful and appreciative of the person's time. For tips on networking and conducting an informational interview, go to careeronestop.org/JobSearch/Network/form-a-network.aspx.
- **The New Mexico Department of Workforce Solutions has created two important websites for students, parents, and educators in our state:**
- **Career Solutions** – at nmcareersolutions.com – offers a Career Solutions Toolbox and steps to Build Your Own Path
- **Students Work** – at dws.state.nm.us/Internships/InternshipStudent – offers ways for students to apply what they have learned in their program of study in high school and develop their skills to prepare for their future.



Acknowledgements

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Thanks also to Michael Stanton, Ph.D., a consultant to the New Mexico Public Education's College and Career Readiness Bureau. Dr. Stanton served as the main contributor, editor and director of the work that went into the *New Mexico Career Clusters Guide*.

Special appreciation goes to the leadership and work of Advance CTE which led the design of the Career Clusters Framework used for the *New Mexico Career Clusters Guide* and has been adopted by the Public Education Department. The National Career Clusters® Framework provides the vital structure for organizing and delivering quality Career Technical Education programs through learning and comprehensive programs of study in New Mexico.

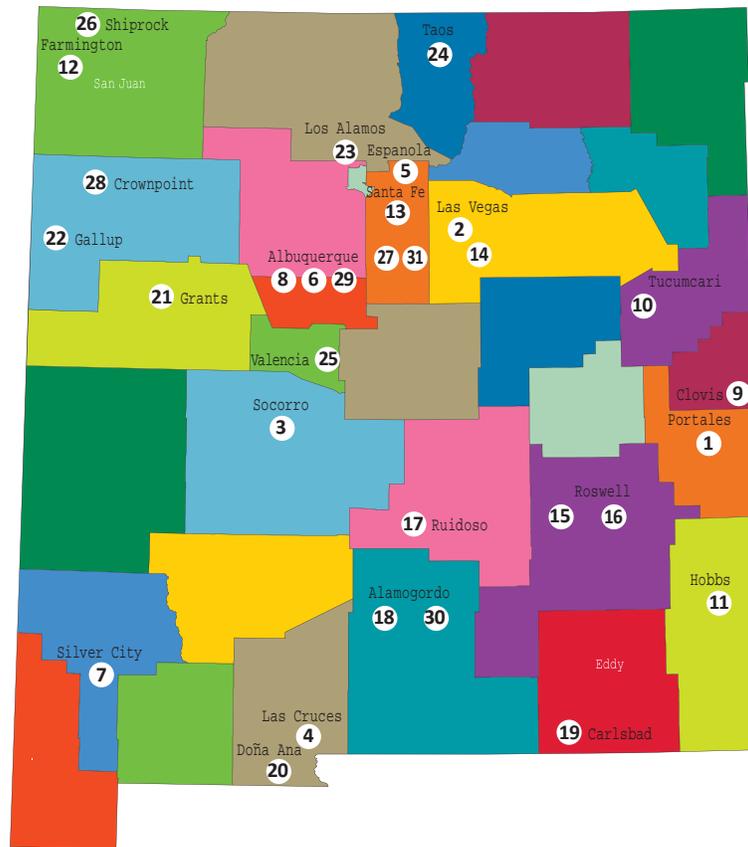
Thanks also to Mary LeFebvre, Principal Research Scientist for the ACT organization which provide the WorkKeys Assessment model adopted by the State of New Mexico and the Department of Workforce Connections as well as many other states and communities. Ms. Lefebvre's work for ACT called "Career Readiness in the United States" provided WorkKeys validated research and data used throughout the *New Mexico Career Clusters Guide*.

In September of 2015, the College and Career Readiness Bureau (CCRB), with the assistance of Cooperative Education Services (CES), contracted with Dr. Stanton to establish focus groups, interviews, and site visits to examine model Programs of Study (POS) in all 16 Career Clusters based on the model adopted by the State of New Mexico and developed by the National Association of States Directors of Career and Technology Education (NASDCTE), the National Career Clusters® Framework. The POS courses were sequenced using the current Student Teacher Accountability Reporting System (STARS) collection. Teams were comprised of volunteers that included secondary, post-secondary and workforce representatives that provide subject matter expertise resulting in the identification of the Programs of Study in the *New Mexico Career Clusters Guide*. The CCRB and Dr. Stanton wish to thank the nearly 300 volunteers that contributed to and participated in this process. The Programs of Study found at the end of each Cluster Chapter is the thoughtful, current result of this work.

Dr. Stanton and the College and Career Readiness Bureau wishes to thank DJ Heckes, CEO of EXHIB-IT! and Matt Witkowski, graphic designer, for their professionalism, patience, and expertise in producing the *New Mexico Career Clusters Guide*.



STATE-FUNDED COLLEGES, UNIVERSITIES, TRIBAL COLLEGES & SPECIAL SCHOOLS IN NEW MEXICO



FOUR-YEAR PUBLIC COLLEGES & UNIVERSITIES:

- 1 Eastern New Mexico University, Portales (1934)
- 2 New Mexico Highlands University, Las Vegas (1893)
- 3 New Mexico Institute of Mining and Technology, Socorro (1889)
- 4 New Mexico State University, Las Cruces (1888)
- 5 Northern New Mexico College, Espanola (1909)
- 6 University of New Mexico, Albuquerque (1889)
- 7 Western New Mexico University, Silver City (1893)

TWO-YEAR BRANCH COMMUNITY COLLEGES:

- 16 ENMU-Roswell (1958)
- 17 ENMU-Ruidoso (1958)
- 18 NMSU-Alamogordo (1959)
- 19 NMSU-Carlsbad (1950)
- 20 NMSU-Doña Ana (1973)
- 21 NMSU-Grants (1968)
- 22 UNM-Gallup (1968)
- 23 UNM-Los Alamos (1956)
- 24 UNM-Taos (1923)
- 25 UNM-Valencia (1978)

TWO-YEAR COMMUNITY COLLEGES:

- 8 Central New Mexico Community College, Albuquerque (1965)
- 9 Clovis Community College, Clovis (1961)
- 10 Mesalands Community College, Tucumcari (1979)
- 11 New Mexico Junior College, Hobbs (1966)
- 12 San Juan College, Farmington (1956)
- 13 Santa Fe Community College, Santa Fe (1983)
- 14 Luna Community College, Las Vegas (1969)
- 15 New Mexico Military Institute, Roswell (1945)

TRIBAL COLLEGES:

- 26 Diné College, Shiprock (1968)
- 27 Institute of American Indian Arts, Santa Fe (1962)
- 28 Navajo Technical College, Crownpoint (1979)
- 29 Southwestern Indian Polytechnic Institute, Albuquerque (1971)

SPECIAL SCHOOLS:

- 30 New Mexico School for the Blind and Visually Impaired, Alamogordo (1903)
- 31 New Mexico School for the Deaf, Santa Fe (1887)