

NORTH DAKOTA CAREER RESOURCE NETWORK

CareerOutlook

35th Edition • 2017-2018



ACKNOWLEDGEMENTS

The Career Outlook is a publication of the North Dakota Department of Career and Technical Education's Career Resource Network (CRN).

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Reference to the North Dakota Department of Career and Technical Education's Career Resource Network and the Career Outlook is requested.

Distribution

North Dakota Army National Guard

Thank you to all who have contributed to the production of this year's Career Outlook.

FROM THE DIRECTOR



Dear Reader:

Welcome to the Career Outlook, your guide to career decision-making. This magazine is intended to provide a range of information that will help you prepare for a successful career in one of the many occupations available in North Dakota.

The Occupational Section is organized by the 16 National Career Clusters. The 79 Career Pathways further define the Career Clusters, and help students navigate their way to greater success in college and career.

For each of the occupations included in this issue, information is provided on the number of jobs that will be available in the near future, education and training requirements, and the earning potential for the chosen field. You will also find helpful resources for different career options, financial planning, entrepreneurship and much more.

Our state offers a wide array of opportunities for those who are just starting their careers and those who are considering a change. Taking the time to learn more about the different options will help you develop a satisfying career.

Best wishes as you prepare for your future!

Sincerely,

A handwritten signature in cursive script that reads "Wayne Kutzer".

Wayne Kutzer, Director
ND Department of Career and Technical Education



Wayne Kutzer and the 2017-18 DECA State Officers.



Career Outlook User's Guide

Make the most of using the Career Outlook with your students or clients! Visit www.nd.gov/cte/crn/coug to find the Career Outlook User's Guide which contains a teacher's guide and lesson plans to enhance the use of the publication.

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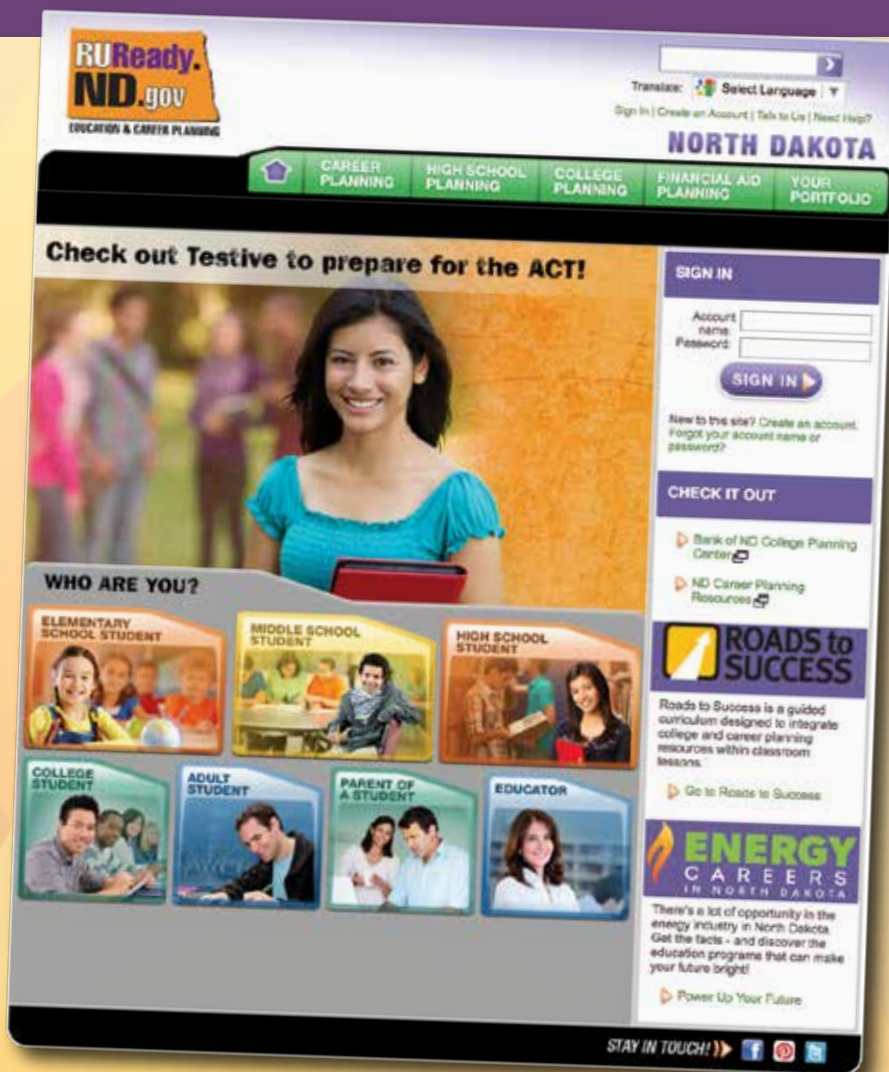
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Prepare for Your Future with *RUReady.ND.gov!*

✓ GO

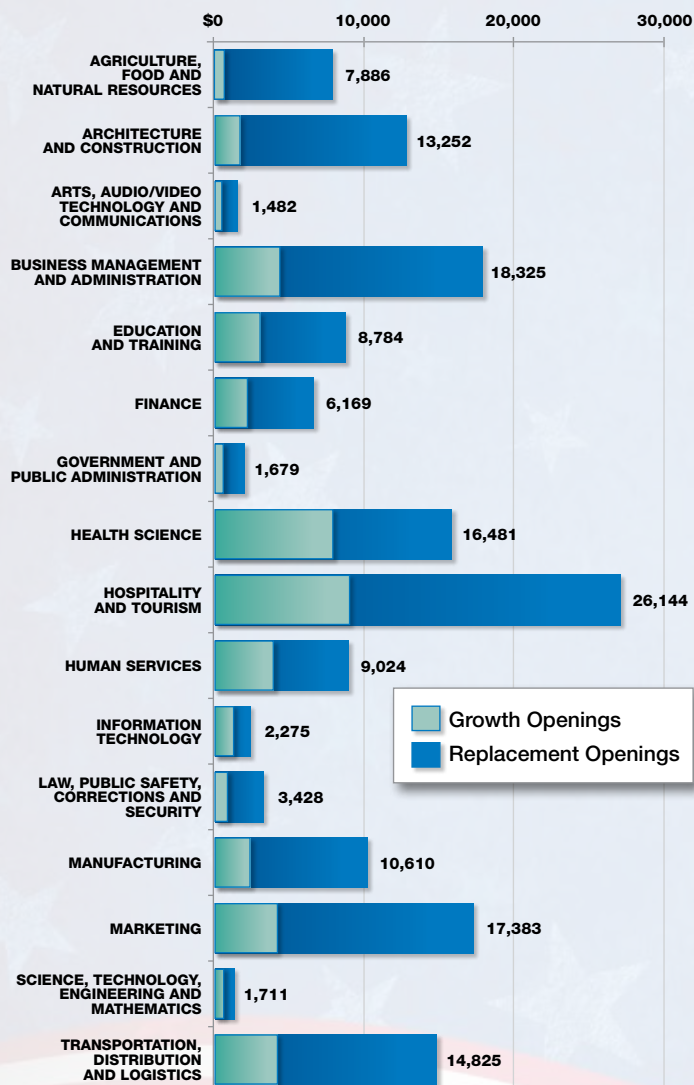
- **DISCOVER**
career interests
- **DEVELOP**
a high school
course plan
- **PRACTICE**
for the ACT
- **EXPLORE**
college programs
- **BUILD**
a financial aid plan



See your school counselor for more
information or visit www.nd.gov/cte/crn

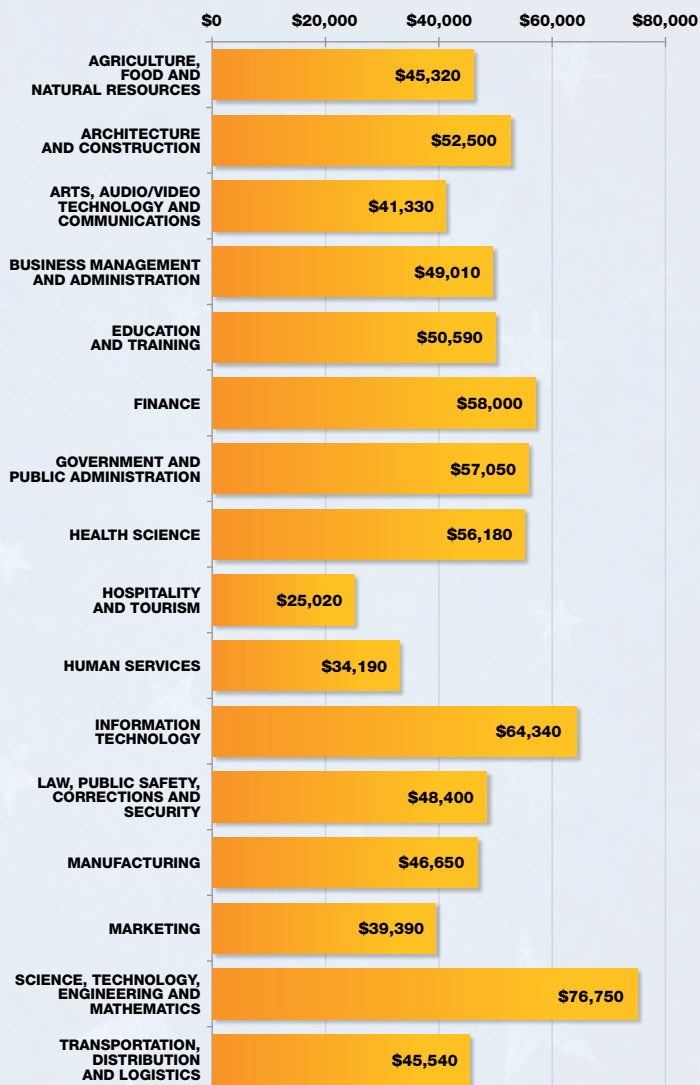


EMPLOYMENT PROJECTIONS 2014-2024 TOTAL OPENINGS



AVERAGE 2015 WAGES

STATEWIDE
AVERAGE WAGES: \$50,696



JOB SERVICE NORTH DAKOTA

Bismarck-Mandan
1601 E Century Ave
701-328-5000

Fargo
1350 32nd St S
701-239-7300

Minot
3416 N Broadway
701-857-7500

Devils Lake
301 College Dr S
701-662-9300

Grand Forks
1501 28th Ave S
701-795-3700

Wahpeton
524 2nd Ave N
701-671-1550

Dickinson
66 Osborn Dr
701-227-3100

Jamestown
1307 12th Ave NE Ste 3
701-253-6200

Williston
422 1st Ave W
701-774-7900

www.jobsnd.com *Statewide TTY 800-366-6888

Career planning and exploration is a vital ingredient in achieving success in the workplace. Today, there are many comprehensive publications and sources of information to aid in the process.

A few of our career-oriented products specific to North Dakota's labor market are available at www.ndworkforceintelligence.com.

They cover nearly everything you ever wanted to know about career opportunities in North Dakota and may include employment projections, wages, core tasks, work activities, skills, knowledge, and typical education/training requirements.

Careers by Education

Typical Entry Level Education & Career			Total Openings	Average 2015 Wage	Examples of Tasks Performed
High School Diploma or Equivalent	1	Farmers, Ranchers and Other Agricultural Managers	4,533	\$74,970	Coordinate the agriculture operations that produce crops, livestock and dairy products.
	2	Customer Service Representatives	2,843	\$33,480	Handle customer complaints and provide information about products and services.
	3	Office Clerks, General	2,401	\$26,940	Perform tasks, including computer usage and maintaining records.
	4	Childcare Workers	2,184	\$20,550	Care for children's basic needs, such as bathing and feeding.
	5	Teacher Assistants	1,770	\$30,220	Work under a teacher's supervision to provide instructional services.
	6	Supervisors of Retail Sales Workers	1,382	\$44,970	Coordinate activities such as purchasing, budgeting and personnel work.
	7	Supervisors of Food Preparation and Serving Workers	1,347	\$33,520	Coordinate activities of workers preparing and serving food.
	8	Maintenance and Repair Workers, General	1,185	\$41,170	Perform maintenance to keep machines and equipment in repair.
	9	Secretaries and Administrative Assistants, Except Legal, Medical and Executive	1,075	\$36,400	Perform routine clerical functions such as scheduling appointments and maintaining paper and electronic files.
	10	Supervisors of Office and Administrative Support Workers	984	\$55,420	Supervise the activities of clerical and administrative workers.
	11	Hotel, Motel and Resort Desk Clerks	971	\$25,460	Register guests, manage reservations and keep records of accounts.
	12	Service Unit Operators, Oil, Gas and Mining	952	\$54,790	Operate equipment to increase oil flow from producing wells.
	13	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	853	\$68,670	Sell goods to businesses or groups of individuals.
	14	Team Assemblers	821	\$31,730	Work as part of a team for assembling an entire product or component.
	15	Insurance Sales Agents	813	\$63,900	Sell life, property, health, automotive, or other types of insurance.
Postsecondary Non-Degree Award	1	Heavy and Tractor-Trailer Truck Drivers	3,161	\$53,400	Transport goods from one location to another. Requires commercial drivers' license.
	2	Nursing Assistants	3,102	\$29,520	Provide basic care in hospitals and long-term care facilities.
	3	Licensed Practical and Licensed Vocational Nurses	1,321	\$41,250	Care for patients in hospitals, nursing homes, clinics and private homes.
	4	Welders, Cutters, Solderers and Brazers	801	\$53,100	Weld and solder components and dismantle metal assemblies.
	5	Hairdressers, Hairstylists and Cosmetologists	692	\$29,650	Provide services, such as cutting, coloring and styling hair.
	6	Automotive Service Technicians and Mechanics	668	\$42,570	Diagnose, adjust, repair, or overhaul automotive vehicles.
	7	Emergency Medical Technicians and Paramedics	475	\$31,330	Administer first-aid treatment and life-support care to people.
	8	Bus and Truck Mechanics and Diesel Engine Specialists	411	\$51,620	Perform routine maintenance and repair of any type of diesel engine.
	9	Medical Records and Health Information Technicians	409	\$38,550	Process and maintain medical records consistent with the health care system.
	10	Phlebotomists	309	\$27,300	Draw blood for tests, transfusions, donations, or research.
Associates Degree	1	Computer User Support Specialists	439	\$46,820	Provide technical assistance to computer users in person, via telephone or electronically.
	2	Preschool Teachers, Except Special Education	340	\$37,960	Instruct children, ages 3-5, to promote social and intellectual growth.
	3	Dental Hygienists	223	\$64,510	Clean teeth, examine gums and watch for decay or gum disease.
	4	Civil Engineering Technicians	190	\$50,720	Apply principles of civil engineering under the direction of engineers.
	5	Computer Network Support Specialists	150	\$53,640	Analyze, troubleshoot and perform maintenance to ensure networks operate correctly.
	6	Life, Physical and Social Science Technicians, All Other	150	\$50,430	Collect samples, prepare specimens and record data to assist scientists.
	7	Radiologic Technologists	146	\$49,990	Take X-rays and CAT scans for diagnostic purposes.
	8	Web Developers	132	\$58,670	Analyze user needs to design, create and modify website content.
	9	Respiratory Therapists	124	\$50,960	Assess, treat and care for patients with breathing disorders.
	10	Medical and Clinical Laboratory Technicians	123	\$41,730	Perform research for the diagnosis and treatment of disease.

Typical Entry Level Education & Career			Total Openings	Average 2015 Wage	Examples of Tasks Performed
Bachelor's Degree	1	Registered Nurses	4,030	\$58,890	Assess health needs, implement nursing care plans and maintain records.
	2	General and Operations Managers	2,146	\$104,550	Duties and responsibilities include formulating policies, managing daily operations and planning the use of materials and human resources.
	3	Accountants and Auditors	1,763	\$56,000	Prepare, examine and analyze accounting records and financial statements.
	4	Elementary School Teachers, Except Special Education	1,394	\$47,110	Instruct students using various teaching methods.
	5	Secondary School Teachers, Except Special and Career/Technical Education	850	\$48,410	Teach students in subjects, such as English, mathematics, or social studies.
	6	Software Developers, Applications	551	\$72,720	Design, create and modify general computer applications software.
	7	Civil Engineers	504	\$74,260	Plan, design and oversee construction of building structures and facilities.
	8	Business Operations Specialists, All Other	494	\$60,670	Handles contract negotiation and other business matters for clients.
	9	Managers, All Other	460	\$90,820	Plan, direct or coordinate public or private sector organizations.
	10	Loan Officers	442	\$70,220	Evaluate, authorize, or approve commercial, real estate, or credit loans.
	11	Chief Executives	432	\$158,580	Provide direction of companies within guidelines set up by a board of directors.
	12	Medical and Health Services Managers	393	\$91,540	Plan, direct, or coordinate medical and health services.
	13	Personal Financial Advisors	373	\$83,480	Advise clients on financial planning using tax and investment strategies.
	14	Financial Managers	372	\$110,890	Coordinate accounting, banking, insurance and financial activities.
	15	Graduate Teaching Assistants	372	N/A	Assist faculty in postsecondary institutions by teaching lower level courses.
Master's, Doctoral, or Professional Degree	1	Lawyers	306	\$101,840	Represent clients, prosecute or defend lawsuits, advise on legal rights.
	2	Pharmacists	238	\$112,110	Dispense drugs prescribed by physicians and health practitioners.
	3	Physicians and Surgeons, All Other	174	\$219,560	Physicians who treat diseases and injuries by surgical methods.
	4	Family and General Practitioners	146	\$191,930	Diagnose, treat and help prevent diseases and injuries that commonly occur.
	5	Clinical, Counseling and School Psychologists	145	\$79,910	Diagnose and treat cognitive, behavioral and emotional problems.
	6	Anesthesiologists	134	\$283,200	Physicians who administer anesthetics prior to, during, or after surgery.
	7	Postsecondary Teachers, All Other	133	\$55,110	Teachers engaged in instruction and those doing teaching and research.
	8	Chiropractors	112	\$69,310	Assess, treat and care for patients by manipulation of spine and musculoskeletal system.
	9	Optometrists	105	\$125,120	Examine eyes and visual system and prescribe corrective lenses.
	10	Dentists, General	101	\$214,450	Examine and treat diseases, injuries and malformations of teeth and gums.
	11	Biological Science Teachers, Postsecondary	80	\$114,480	Teach biological sciences and may include research.
	12	Veterinarians	61	\$85,310	Diagnose, treat, or research diseases and injuries of animals.
	13	Business Teachers, Postsecondary	56	\$108,560	Teach courses in business administration and management, such as accounting, finance, marketing and operations research.
	14	Health Specialties Teachers, Postsecondary	50	\$101,450	Teach courses in specialties such as dentistry, laboratory technology, medicine, pharmacy, public health, and veterinary medicine.
	15	Mathematical Science Teachers, Postsecondary	41	\$69,870	Teach mathematical concepts, statistics, actuarial science and standardized mathematical techniques needed for solving specific problems.

METHODOLOGY: These careers were selected based on the projected growth and replacement openings published in Job Service North Dakota's 2014-2024 Long-Term Employment Projections report.

TOTAL OPENINGS INCLUDE GROWTH AND REPLACEMENT OPENINGS: Growth openings are the number of anticipated openings due to new job growth. Replacement openings are the number of anticipated openings due to workers who permanently leave an occupation (i.e., retirement, death, etc.)

TYPICAL ENTRY-LEVEL EDUCATION: Describes the education level most workers need to enter the occupation. The typical entry-level education is based on data from the U.S. Bureau of Labor Statistics and may differ by region or employer.

AVERAGE 2015 WAGES: Wage data originate from the 2015 Occupational Employment Statistics (OES) survey. Excludes overtime pay and earnings from self-employed workers.

Scholarship Requirements



Academic Scholarship Requirements

- ◆ 1 unit of mathematics for which Algebra II is a prerequisite.
- ◆ 2 units of the same foreign language; the same Native American language; American Sign Language; or a career and technical education coordinated plan of study.
- ◆ 1 unit selected from foreign languages; Native American languages; American Sign Language; fine arts; or career and technical education.
- ◆ 1 unit of an advanced placement course and examination; 1 unit of an early entrance program course; or ½ unit of a dual credit course.
- ◆ Receive a composite score of at least 24 on the ACT test.

North Dakota Academic and Career & Technical Education Scholarship Programs

North Dakota resident students may apply for either the North Dakota Academic or Career and Technical Education Scholarship. The amount of each scholarship is \$750 per semester or \$500 per quarter based on full-time enrollment in an accredited higher education institution in North Dakota, both public and private. The students may be eligible for up to \$6,000 within six academic school years (do not have to be consecutive years) after graduation from high school.

The scholarship is renewable provided the student is enrolled full time in North Dakota, maintains a 2.75 GPA while attending college and maintains progress toward degree completion. For purposes of eligibility, "full-time" is defined by the institution the student is attending.

Beginning August 1, 2017, ongoing eligibility requires full-time enrollment as well as successful completion of credits to ensure progress toward degree completion. Adequate progress towards degree completion is defined as follows:

North Dakota seniors must apply by the first Friday in June to establish eligibility. For 2018, the date will be June 1. Students who are awarded a scholarship may defer acceptance of the scholarship.

Credits Earned after	Credits
Semester Two	24
Semester Three	39
Semester Four	54
Semester Five	69
Semester Six	84
Semester Seven	99

Students will need to plan their high school coursework carefully to meet all eligibility requirements within the four years of high school. For a complete listing of eligibility requirements for both scholarship programs, or for an application, visit

- www.nd.gov/dpi/SchoolStaff/SAO/grantscholar
- or call 701-328-2244.

Common Requirements for BOTH Scholarships

- ◆ North Dakota residency.
- ◆ Graduate from a high school in ND; from a high school in a bordering state; from a nonpublic high school in a neighboring state while the student resides with a custodial parent in ND; or complete a program of home education supervised in accordance with NDCC Chapter 15.1-23.
- ◆ Complete the diploma requirements.
- ◆ Obtain a grade of at least "C" in each unit OR ½ unit required under the specific units required by each respective scholarship.
- ◆ Obtain a cumulative grade point of at least 3.0 on a 4.0 grading scale based on the 22 units required by each respective scholarship. The GPA must be rounded to the nearest hundredth for eligibility purposes.
- ◆ Complete 1 unit of Algebra II.

Career and Technical Education Scholarship Requirements

- ◆ 4 units of career and technical education in which 2 units must be from a coordinated plan of study recommended by ND Career & Technical Education. Visit www.nd.gov/cte/programs/career-dev/plans-of-study.html for more information.
- ◆ 1 unit selected from foreign languages; Native American languages; American Sign Language; fine arts; or career and technical education.
- ◆ Receive a composite score of at least 24 on the ACT Test; or a score of at least 5 on each of the three required WorkKeys assessments (Applied Math, Graphic Literacy, Workplace Documents).

With so many careers available, *where do you start?*



Andrew Kreidt

Career Cluster: Agriculture,
Food & Natural Resources
Pathway: Plant Systems
Page 15

The Career Outlook magazine is designed to provide career exploration and planning information. This edition features eight individuals working in or pursuing a specific career cluster and pathway. Transitioning to a different pathway or cluster in the future is an option for each of them based on their education, skill levels, and interests.

How many options does your career plan have?



Jade Heilman

Career Cluster: Architecture
& Construction
Pathway: Construction
Page 19



Jenna McKay

Career Cluster: Business
Management & Administration
Pathway: General Management
Page 23



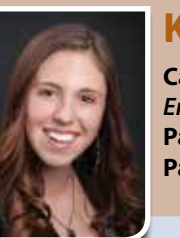
Nick Nupdal

Career Cluster: Finance
Pathway: Business Finance
Page 29



Amanda Martin

Career Cluster: Marketing
Pathway: Marketing
Communications
Page 47



Kelsey Hibl

Career Cluster: Science, Technology,
Engineering & Mathematics
Pathway: Engineering & Technology
Page 48

Entrepreneur

The Entrepreneurship article
on page 38 features

Andrea Gottbreht Birst

Career Cluster: Human Services
Pathway: Personal Care Services

*Is Entrepreneurship for you?
Take the survey on page 39.*



CTE Presidential Scholar

Evan Welsh

Evan Welsh, CTE Presidential Scholar,
is featured on page 40.

Career Cluster:
Information Technology



Career Clusters Interest Survey

Directions: ☒ Check the items in each box that best describe you. You may make as many or as few checks as you choose. Add up the number of checkmarks in each row and place the total in the box at the end of the row. Look to see which three have the highest numbers. Find the corresponding Career Clusters at the end of the survey to see which clusters you may want to explore.

	Activities that describe what I like to do:	Personal qualities that describe me:	School subjects that I like:	Total number <input checked="" type="checkbox"/> checked
1	<input type="checkbox"/> Learn how things grow and stay alive. <input type="checkbox"/> Make the best use of the earth's natural resources. <input type="checkbox"/> Hunt and/or fish. <input type="checkbox"/> Protect the environment. <input type="checkbox"/> Be outdoors in all kinds of weather. <input type="checkbox"/> Plan, budget, and keep records. <input type="checkbox"/> Operate machines and keep them in good repair.	<input type="checkbox"/> Self-reliant (able to do it yourself) <input type="checkbox"/> Nature lover <input type="checkbox"/> Physically active <input type="checkbox"/> Planner <input type="checkbox"/> Creative problem solver	<input type="checkbox"/> Math <input type="checkbox"/> Life Sciences <input type="checkbox"/> Earth Sciences <input type="checkbox"/> Chemistry <input type="checkbox"/> Agriculture	Total
2	<input type="checkbox"/> Read and follow instructions and/or blueprints. <input type="checkbox"/> Picture in my mind what a finished product looks like. <input type="checkbox"/> Work with my hands. <input type="checkbox"/> Perform work that requires precise results. <input type="checkbox"/> Solve technical problems. <input type="checkbox"/> Visit and learn from beautiful, historic, or interesting buildings. <input type="checkbox"/> Follow logical, step-by-step procedures.	<input type="checkbox"/> Curious <input type="checkbox"/> Good at following directions <input type="checkbox"/> Pay attention to detail <input type="checkbox"/> Good at visualizing possibilities <input type="checkbox"/> Patient and persistent	<input type="checkbox"/> Math <input type="checkbox"/> Drafting <input type="checkbox"/> Physical Sciences <input type="checkbox"/> Construction Trades <input type="checkbox"/> Electrical Trades <input type="checkbox"/> Heat, Air Conditioning and Refrigeration	Total
3	<input type="checkbox"/> Use my imagination to communicate new information to others. <input type="checkbox"/> Perform in front of others. <input type="checkbox"/> Read and write. <input type="checkbox"/> Play a musical instrument. <input type="checkbox"/> Perform creative, artistic activities. <input type="checkbox"/> Use video and recording technology. <input type="checkbox"/> Design brochures and posters.	<input type="checkbox"/> Creative and imaginative <input type="checkbox"/> Good communicator/good vocabulary <input type="checkbox"/> Curious about new technology <input type="checkbox"/> Relate well to feelings and thoughts of others <input type="checkbox"/> Determined/tenacious	<input type="checkbox"/> Art/Graphic Design <input type="checkbox"/> Music <input type="checkbox"/> Speech and Drama <input type="checkbox"/> Journalism/Literature <input type="checkbox"/> Audiovisual Technologies	Total
4	<input type="checkbox"/> Perform routine, organized activities but can be flexible. <input type="checkbox"/> Work with numbers and detailed information. <input type="checkbox"/> Be the leader in a group. <input type="checkbox"/> Make business contact with people. <input type="checkbox"/> Work with computer programs. <input type="checkbox"/> Create reports and communicate ideas. <input type="checkbox"/> Plan my work and follow instructions without close supervision.	<input type="checkbox"/> Organized <input type="checkbox"/> Practical and logical <input type="checkbox"/> Patient <input type="checkbox"/> Tactful <input type="checkbox"/> Responsible	<input type="checkbox"/> Business Technology Applications <input type="checkbox"/> Accounting <input type="checkbox"/> Math <input type="checkbox"/> English/Language Arts <input type="checkbox"/> Economics	Total
5	<input type="checkbox"/> Communicate with different types of people. <input type="checkbox"/> Help others with their homework or to learn new things. <input type="checkbox"/> Go to school. <input type="checkbox"/> Direct and plan activities for others. <input type="checkbox"/> Handle several responsibilities at once. <input type="checkbox"/> Acquire new information. <input type="checkbox"/> Help people overcome their challenges.	<input type="checkbox"/> Friendly <input type="checkbox"/> Decision maker <input type="checkbox"/> Helpful <input type="checkbox"/> Innovative/Inquisitive <input type="checkbox"/> Good listener	<input type="checkbox"/> English/Language Arts <input type="checkbox"/> Social Studies <input type="checkbox"/> Math <input type="checkbox"/> Science <input type="checkbox"/> Psychology	Total
6	<input type="checkbox"/> Work with numbers. <input type="checkbox"/> Work to meet a deadline. <input type="checkbox"/> Make predictions based on existing facts. <input type="checkbox"/> Have a clear set of rules to follow. <input type="checkbox"/> Analyze financial information and interpret it to others. <input type="checkbox"/> Handle money with accuracy and reliability. <input type="checkbox"/> Take pride in the way I dress and look.	<input type="checkbox"/> Trustworthy <input type="checkbox"/> Orderly <input type="checkbox"/> Self-confident <input type="checkbox"/> Logical <input type="checkbox"/> Methodical or efficient	<input type="checkbox"/> Accounting <input type="checkbox"/> Math <input type="checkbox"/> Economics <input type="checkbox"/> Banking/Financial Services <input type="checkbox"/> Business Law	Total
7	<input type="checkbox"/> Be involved in politics. <input type="checkbox"/> Negotiate, defend, and debate ideas and topics. <input type="checkbox"/> Plan activities and work cooperatively with others. <input type="checkbox"/> Work with details. <input type="checkbox"/> Perform a variety of duties that may change often. <input type="checkbox"/> Analyze information and interpret it to others. <input type="checkbox"/> Travel and see things that are new to me.	<input type="checkbox"/> Good communicator <input type="checkbox"/> Competitive <input type="checkbox"/> Service minded <input type="checkbox"/> Well organized <input type="checkbox"/> Problem solver	<input type="checkbox"/> Government <input type="checkbox"/> English/Language Arts <input type="checkbox"/> Social Studies <input type="checkbox"/> Math <input type="checkbox"/> Foreign Language	Total
8	<input type="checkbox"/> Work under pressure. <input type="checkbox"/> Help sick people and animals. <input type="checkbox"/> Make decisions based on logic and information. <input type="checkbox"/> Participate in health and science classes. <input type="checkbox"/> Respond quickly and calmly in emergencies. <input type="checkbox"/> Work as a member of a team. <input type="checkbox"/> Follow guidelines precisely and meet strict standards of accuracy.	<input type="checkbox"/> Compassionate and caring <input type="checkbox"/> Good at following directions <input type="checkbox"/> Conscientious and careful <input type="checkbox"/> Patient <input type="checkbox"/> Good listener	<input type="checkbox"/> Biological Sciences <input type="checkbox"/> Chemistry <input type="checkbox"/> Math <input type="checkbox"/> Health Sciences <input type="checkbox"/> English/Language Arts	Total

Source: Adapted from the Guidance Division Survey, Oklahoma Department of Career and Technology Education (2005)

Note: This survey does not make any claims of statistical reliability and has not been normed. It is intended for use as a guidance tool to generate discussion regarding careers and is valid for that purpose.

Disclaimer: Your interests may change over time. These survey results are intended to assist you with informal career exploration. Consider more formal assessments and other resources or services to help you plan your career.

Terminology: For definitions of terminology used in the survey, visit www.nd.gov/cte/crn/toolkit/docs/TermDefinitions.pdf.

Activities that describe what I like to do:		Personal qualities that describe me:	School subjects that I like:	Total number checked
9	<input type="checkbox"/> Investigate new places and activities. <input type="checkbox"/> Work with all ages and types of people. <input type="checkbox"/> Organize activities in which other people enjoy themselves. <input type="checkbox"/> Have a flexible schedule. <input type="checkbox"/> Help people make up their minds. <input type="checkbox"/> Communicate easily, tactfully, and courteously. <input type="checkbox"/> Learn about other cultures.	<input type="checkbox"/> Tactful <input type="checkbox"/> Self-motivated <input type="checkbox"/> Works well with others <input type="checkbox"/> Outgoing <input type="checkbox"/> Slow to anger	<input type="checkbox"/> English/Language Arts/Speech <input type="checkbox"/> Foreign Language <input type="checkbox"/> Social Sciences <input type="checkbox"/> Marketing <input type="checkbox"/> Food Services	Total
	<input type="checkbox"/> Care about people, their needs, and their problems. <input type="checkbox"/> Volunteer my services for the good of the community. <input type="checkbox"/> Listen to other people's viewpoints. <input type="checkbox"/> Help people be at their best. <input type="checkbox"/> Work with people from preschool age to old age. <input type="checkbox"/> Think of new ways to do things. <input type="checkbox"/> Make friends with different kinds of people.	<input type="checkbox"/> Good communicator/good listener <input type="checkbox"/> Caring <input type="checkbox"/> Non-materialistic <input type="checkbox"/> Uses intuition (instinct) and logic <input type="checkbox"/> Non-judgmental	<input type="checkbox"/> English/Language Arts <input type="checkbox"/> Psychology/Sociology <input type="checkbox"/> Family and Consumer Sciences <input type="checkbox"/> Finance <input type="checkbox"/> Foreign Language	Total
	<input type="checkbox"/> Work with computers. <input type="checkbox"/> Reason clearly and logically to solve complex problems. <input type="checkbox"/> Use machines, techniques, and processes. <input type="checkbox"/> Read technical materials and diagrams and solve technical problems. <input type="checkbox"/> Adapt to change. <input type="checkbox"/> Play video games and figure out how they work. <input type="checkbox"/> Concentrate for long periods without being distracted.	<input type="checkbox"/> Logical/analytical thinker <input type="checkbox"/> See details in the big picture <input type="checkbox"/> Persistent <input type="checkbox"/> Good concentration skills <input type="checkbox"/> Precise and accurate	<input type="checkbox"/> Math <input type="checkbox"/> Science <input type="checkbox"/> Computer Technology <input type="checkbox"/> Communications <input type="checkbox"/> Graphic Design	Total
	<input type="checkbox"/> Work under pressure or in the face of danger. <input type="checkbox"/> Make decisions based on my own observations. <input type="checkbox"/> Interact with other people. <input type="checkbox"/> Be in positions of authority. <input type="checkbox"/> Respect rules and regulations. <input type="checkbox"/> Debate and win arguments. <input type="checkbox"/> Observe and analyze people's behavior.	<input type="checkbox"/> Adventurous <input type="checkbox"/> Dependable <input type="checkbox"/> Community-minded <input type="checkbox"/> Decisive <input type="checkbox"/> Optimistic	<input type="checkbox"/> English/Language Arts <input type="checkbox"/> Psychology/Sociology <input type="checkbox"/> Social Studies <input type="checkbox"/> Law Enforcement <input type="checkbox"/> First Aid/First Responder	Total
	<input type="checkbox"/> Work with hands and learn that way. <input type="checkbox"/> Put things together. <input type="checkbox"/> Do routine, organized and accurate work. <input type="checkbox"/> Perform activities that produce real, concrete results. <input type="checkbox"/> Apply math to work out solutions. <input type="checkbox"/> Use hand and power tools and operate equipment machinery. <input type="checkbox"/> Visualize objects in three dimensions from flat drawings.	<input type="checkbox"/> Practical <input type="checkbox"/> Observant <input type="checkbox"/> Physically active <input type="checkbox"/> Step-by-step thinker <input type="checkbox"/> Coordinated	<input type="checkbox"/> Math-Geometry <input type="checkbox"/> Chemistry <input type="checkbox"/> Trade and Industry Courses <input type="checkbox"/> Physics <input type="checkbox"/> English/Language Arts	Total
	<input type="checkbox"/> Shop and go to the mall. <input type="checkbox"/> Be in charge. <input type="checkbox"/> Make displays and promote ideas. <input type="checkbox"/> Give presentations and enjoy public speaking. <input type="checkbox"/> Persuade people to buy products or to participate in activities. <input type="checkbox"/> Communicate my ideas to other people. <input type="checkbox"/> Take advantage of opportunities to make extra money.	<input type="checkbox"/> Enthusiastic <input type="checkbox"/> Competitive <input type="checkbox"/> Creative <input type="checkbox"/> Self-motivated <input type="checkbox"/> Persuasive	<input type="checkbox"/> English/Language Arts <input type="checkbox"/> Math <input type="checkbox"/> Business Education/Marketing <input type="checkbox"/> Economics <input type="checkbox"/> Computer Applications	Total
	<input type="checkbox"/> Interpret formulas. <input type="checkbox"/> Find the answers to questions. <input type="checkbox"/> Work in a laboratory. <input type="checkbox"/> Figure out how things work and investigate new things. <input type="checkbox"/> Explore new technology. <input type="checkbox"/> Experiment to find the best way to do something. <input type="checkbox"/> Pay attention to details and be precise.	<input type="checkbox"/> Detail oriented <input type="checkbox"/> Inquisitive <input type="checkbox"/> Objective <input type="checkbox"/> Methodical <input type="checkbox"/> Mechanically inclined	<input type="checkbox"/> Drafting/Computer-Aided Drafting <input type="checkbox"/> Math <input type="checkbox"/> Science <input type="checkbox"/> Electronics/Computer Networking <input type="checkbox"/> Technology Education	Total
	<input type="checkbox"/> Travel. <input type="checkbox"/> See well and have quick reflexes. <input type="checkbox"/> Solve mechanical problems. <input type="checkbox"/> Design efficient processes. <input type="checkbox"/> Anticipate needs and prepare to meet them. <input type="checkbox"/> Drive or ride. <input type="checkbox"/> Move things from one place to another.	<input type="checkbox"/> Realistic <input type="checkbox"/> Mechanical <input type="checkbox"/> Coordinated <input type="checkbox"/> Observant <input type="checkbox"/> Planner	<input type="checkbox"/> Math <input type="checkbox"/> Trade and Industry Courses <input type="checkbox"/> Physical Sciences <input type="checkbox"/> Economics <input type="checkbox"/> Foreign Language	Total

Indicate your top three Clusters of Interest based on the number of checks in the Survey:

1	Agriculture, Food & Natural Resources	P. 14	9	Hospitality & Tourism	P. 34
2	Architecture & Construction	P. 17	10	Human Services	P. 36
3	Arts, A/V Technology & Communications	P. 20	11	Information Technology	P. 40
4	Business Management & Administration	P. 22	12	Law, Public Safety, Corrections & Security	P. 42
5	Education & Training	P. 25	13	Manufacturing	P. 44
6	Finance	P. 28	14	Marketing	P. 46
7	Government & Public Administration	P. 30	15	Science, Technology, Engineering & Mathematics	P. 48
8	Health Science	P. 31	16	Transportation, Distribution & Logistics	P. 50

For more information see your career or school counselor, visit a career and technical center, an institution of higher education, Job Service North Dakota, or go to

RURReady.ND.gov

How to Use THE OCCUPATIONAL SECTION

		National	5 ND Outlook 2014-2024				ND Earnings Outlook	6
Occupational Title/Description 1	Holland Code 2 Related Occupations 3	4 Number Employed	Number Employed	Total Openings	Long-Term Growth Outlook	Annual Entry-Level Wages Annual Average Wages	Occupational Trait(s) 7	
Postsecondary Programs – High School Diploma, Certificate, or Associate’s Degree								
Agricultural and Food Science Technicians Work with agricultural and food scientists in food, fiber, and animal research, production, and processing. Conduct tests and experiments to improve yield and quality of crops or to increase the resistance of plants and animals to disease or insects.	Realistic Dairy Technologist; Feed Research Technician	33,000	216	89	Below Avg Growth	\$32,420 \$46,110		
Environmental Engineering Technicians Apply theory and principles of environmental engineering to modify, test, and operate equipment and devices used in the prevention, control, and remediation of environmental problems, including waste treatment and site remediation.	Realistic Air Analysis Engineering Technician; Pollution Control Engineering Technician	18,600	26	7	Below Avg Growth	\$42,080 \$55,960	 	

1 Occupational Title/Description - Most commonly used title for the occupation and a description that provides a general idea of the tasks associated with this occupation.

2 Holland Type
Artistic (Creator): Artistic occupations frequently involve working with forms, designs and patterns. They often require self-expression, and the work can be done without following a clear set of rules.
Conventional (Organizer): Conventional occupations frequently involve following set procedure and routines. These occupations can include working with data and details more than ideas. Usually there is a clear line of authority to follow.
Enterprising (Persuader): Enterprising occupations frequently involve starting and carrying out projects. These occupations can involve leading people and making decisions. Sometimes they require risk taking and often deal with business.
Investigative (Thinker): Investigative occupations frequently involve working with ideas and require an extensive amount of thinking. These occupations can involve searching for the facts and figuring out problems mentally.
Realistic (Do-er): Realistic occupations frequently involve work activities that include practical, hands-on problems and solutions. They often deal with plants, animals and real-world materials like wood, tools and machinery. Many of the occupations require working outside and do not involve a lot of paperwork or working closely with others.
Social (Helper): Social occupations frequently involve working with, communicating with, and teaching people. These occupations often involve helping or providing service to others.

For more information about Holland Types, visit www.nd.gov/cte/crn/docs/HollandTypes.pdf

3 Related Occupations - A listing of occupations that are similar in work performed on the job.

4 National - Number Employed indicates the number of persons employed in this occupation in the United States.

5 ND Outlook 2014-2024

Number Employed indicates the number of persons employed in this occupation in North Dakota.

Total Openings include growth and replacement openings.

Long-Term Growth Outlook

Exceptional: 50% or more per year
 High Growth: 20.0-49.9% per year
 Average to Near Average Growth: 10-19.9% per year
 Below Average Growth: 0.1-9.9% per year
 Zero to Declining Growth: 0% or less per year

6 ND Earnings Outlook

Annual Entry-Level Wages - The average of the bottom 1/3 of overall wage distribution.

Annual Average Wages - Estimated total wages of an occupation divided by its employment.

The salaries shown reflect a 40-hour work week for many occupations. Be aware it is possible to earn a considerably higher salary in those occupations where overtime wages are paid.

7 Occupational Trait(s)

- High Wage - North Dakota average annual salary of at least \$50,696.
- High Skill - Occupation requires at least one year of post high school education or training.
- Bright Outlook - Occupation has a very high number of annual openings and/or is a fast-growing occupation in North Dakota.
- Energy Occupations in North Dakota.
- Occupation exists in the military.

Career Clusters The occupational and related information in the Career Outlook is broken into sixteen Career Clusters, listed below. You are encouraged to use the Career Clusters Interest Survey on pages 10 and 11 or in RUReady.ND.gov to help identify the cluster or clusters most closely related to your personal preferences and interests.

Career Cluster	Page	Career Cluster	Page
Agriculture, Food & Natural Resources	P. 14	Information Technology	P. 40
Architecture & Construction	P. 17	Law, Public Safety, Corrections & Security	P. 42
Arts, A/V Technology & Communications	P. 20	Manufacturing	P. 44
Business Management & Administration	P. 22	Marketing	P. 46
Education & Training	P. 25	Science, Technology, Engineering & Mathematics	P. 48
Energy	P. 27	Transportation, Distribution & Logistics	P. 50
Finance	P. 28		
Government & Public Administration	P. 30		
Health Science	P. 31		
Hospitality & Tourism	P. 34		
Human Services	P. 36		

The occupation information in this section is taken from the 2014-2024 North Dakota Long-Term Employment Projections. This publication is a long-term look at future employment levels by industry and occupation updated every two years by Job Service North Dakota, working closely with the Bureau of Labor Statistics. Wages were updated using the 2016 Edition of the North Dakota Employment and Wages by Occupation, which is updated annually by Job Service North Dakota. When current figures are not included in these publications, every effort is made to obtain current and relevant data from those fields.

Occupational Section Directory

Accountants and Auditors.....23	Desktop Publishers.....20	Loan Officers.....28	Radiologic Technologists.....32
Administrative Services Managers.....23	Detectives and Criminal Investigators.....42	Lodging Managers.....34	Real Estate Agents.....46
Advertising and Promotions Managers.....46	Diagnostic Medical Sonographers.....31	Logisticians.....51	Receptionists and Information Clerks.....22
Advertising Sales Agents.....22	Dietitians and Nutritionists.....32	Machinists.....44	Recreation Workers.....34
Aerospace Engineering and Operations Technicians.....50	Directors, Religious Activities and Education.....36	Maids and Housekeeping Cleaners.....34	Rehabilitation Counselors.....32
Agricultural and Food Science Technicians.....14	Education Administrators, Elementary and Secondary School.....25	Maintenance and Repair Workers, General.....17	Residential Advisors.....36
Agricultural Engineers.....48	Educational, Guidance, School, and Vocational Counselors.....25	Management Analysts.....24	Respiratory Therapists.....32
Agricultural Inspectors.....14	Electrical and Electronic Equipment Assemblers.....44	Market Research Analysts and Marketing Specialists.....46	Retail Salespersons.....46
Aircraft Mechanics and Service Technicians.....50	Electrical Engineers.....49	Marketing Managers.....46	Rotary Drill Operators, Oil and Gas.....14
Ambulance Drivers and Attendants.....50	Electrical Power-Line Installers and Repairers.....17	Marriage and Family Therapists.....36	Sales Agents, Securities.....28
Amusement and Recreation Attendants.....34	Electricians.....17	Massage Therapists.....36	Sales Engineers.....46
Animal Trainers.....34	Electronic Home Entertainment Equip. Installers and Repairers.....20	Materials Engineers.....18	Sales Managers.....46
Appraisers and Assessors of Real Estate.....46	Elementary School Teachers.....25	Mechanical Drafters.....48	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products.....45
Architects.....18	Eligibility Interviewers, Government Programs.....30	Mechanical Engineer.....49	Sawing Machine Setters, Operators, and Tenders, Wood.....44
Architectural and Civil Drafters.....17	Emergency Management Directors.....30	Medical and Clinical Laboratory Technicians.....31	Secretaries and Administrative Assistants.....22
Athletic Trainers.....32	Emergency Medical Technicians.....31	Medical and Health Services Managers.....32	Self-Enrichment Education Teachers.....25
Audio and Video Equipment Technicians.....20	Environmental Engineering Technicians.....14	Medical Records and Health Information Technicians.....31	Service Unit Operators, Oil, Gas and Mining.....14
Automotive Service Technicians and Mechanics.....50	Environmental Engineers.....15	Medical Scientists.....32	Shipping, Receiving, and Traffic Clerks.....50
Bakers.....34	Environmental Science and Protection Technicians.....14	Medical Secretaries.....22	Social and Community Service Managers.....42
Bank Tellers.....28	Excavating, Loading Machine and Dragline Operators.....14	Meeting, Convention, and Event Planners.....34	Social and Human Service Assistants.....36
Billing and Posting Clerks.....22	Farm and Home Management Advisors.....15	Mental Health Counselors.....32,37	Software Developers, Applications.....41
Bookkeeping, Accounting, and Auditing Clerks.....22	Farm Equipment Mechanics and Service Technicians.....14	Merchandise Displayers and Window Trimmers.....46	Soil and Plant Scientists.....16
Brokerage Clerks.....28	Farmworkers and Laborers, Crop, Nursery, and Greenhouse.....14	Microbiologists.....49	Special Education Teachers, Kindergarten and Elementary School.....25
Budget Analysts.....23	Film and Video Editors.....20	Mining and Geological Engineers.....49	Speech-Language Pathologists.....33
Bus and Truck Mechanics/Diesel Engine Specialists.....50	Financial Analysts.....28	Morticians, Undertakers, and Funeral Directors.....36	Stock Clerks and Order Fillers.....22
Bus Drivers, School or Special Client.....50	Financial Examiners.....30	Multimedia Artists and Animators.....20	Structural Iron and Steel Workers.....17
Cabinetmakers and Bench Carpenters.....44	Financial Managers.....28	Multiple Machine Tool Setters, Operators and Tenders.....44	Structural Metal Fabricators and Fitters.....44
Cardiovascular Technologists.....31	Firefighters.....42	Museum Technicians and Conservators.....21	Substance Abuse and Behavioral Disorder Counselors.....33
Career/Technical Education Teachers, Secondary School.....25	Fish and Game Wardens.....14	Network and Computer Systems Administrators.....41	Supervisors of Construction Trades Workers.....17
Cargo and Freight Agents.....50	Fitness Trainers and Aerobics Instructors.....25	Nurses, Licensed Practical.....31	Supervisors of Helpers, Laborers, and Material Movers.....50
Carpenters.....17	Food Scientists and Technologists.....15	Nurses, Registered.....31	Supervisors of Office/Administrative Support Workers.....22
Cashiers.....46	Food Service Managers.....34	Nursing Assistants.....31	Supervisors of Production and Operating Workers.....44
Cement Masons and Concrete Finishers.....17	Forensic Science Technicians.....42	Nursing Instructors and Teachers, Postsecondary.....25	Supervisors of Retail Sales Workers.....46
Chemical Engineer.....48	Foresters.....16	Occupational Health and Safety Specialists.....16	Surgical Technologists.....32
Child, Family, and School Social Workers.....36	Freight, Stock and Material Handlers.....50	Occupational Therapists.....32	Surveying and Mapping Technicians.....17
Childcare Workers.....36	General and Operations Managers.....23	Occupational Therapy Assistants.....31	Surveyors.....18
Chiropractors.....32	Graphic Designers.....20	Operations Research Analysts.....41	Tank Car, Truck, and Ship Loaders.....50
Civil Engineering Technicians.....48	Hairdressers, Hairstylists, and Cosmetologists.....36	Ophthalmic Medical Technicians.....31	Tax Examiners and Collectors, and Revenue Agents.....30
Civil Engineers.....18	Health Educators.....32	Optometrists.....32	Tax Preparers.....28
Claims Adjusters, Examiners, and Investigators.....28	Healthcare Social Workers.....36	Packers and Packagers, Hand.....50	Teacher Assistants.....25
Clergy.....36	Heating and Air Conditioning Mechanics.....17	Paralegals and Legal Assistants.....42	Telecommunications Equipment Installers and Repairers.....20
Clinical, Counseling, and School Psychologists.....36	Home Health Aides.....31	Parts Salespersons.....14	Telecommunications Line Installers and Repairers.....20
Commercial and Industrial Designers.....20	Hosts and Hostesses.....34	Payroll and Timekeeping Clerks.....22	Title Examiners, Abstractors, and Searchers.....42
Commercial Pilots.....50	Hotel, Motel, and Resort Desk Clerks.....34	Personal Care Aides.....36	Tool and Die Makers.....44
Compliance Officers.....15	Human Resources Specialists.....23	Pharmacy Technicians.....31	Tour Guides.....34
Computer Network Architects.....41	Hydrologists.....49	Photographers.....20	Training and Development Specialists.....24
Computer Network Support Specialists.....40	Industrial Engineers.....49	Physical Therapists.....32	Transportation Security Screeners.....42
Computer Operators.....40	Industrial Machinery Mechanics.....44	Physician Assistants.....32	Transportation, Storage, and Distribution Managers.....51
Computer Systems Analysts.....41	Industrial Production Managers.....45	Plumbers and Pipefitters.....17	Travel Agents.....34
Computer User Support Specialists.....40	Industrial Truck and Tractor Operators.....50	Police and Sheriff's Patrol Officers.....42	Veterinarians.....16
Computer-Controlled Machine Tool Operators.....44	Information Security Analysts.....41	Police, Fire, and Ambulance Dispatchers.....42	Veterinary Technologists and Technicians.....14
Conservation Scientists.....15	Inspectors, Testers, Sorters, Samplers, and Weighers.....44	Postmasters and Mail Superintendents.....30	Waiters and Waitresses.....34
Construction Equipment Operators.....17	Instructional Coordinators.....25	Power Plant Operators.....44	Water and Wastewater Treatment Plant and System Operators.....14
Construction Managers.....18	Insurance Claims and Policy Processing Clerks.....22,28	Preschool Teachers.....25	Web Developers.....40
Correctional Officers and Jailers.....42	Insurance Sales Agents.....28	Probation Officers and Correctional Treatment Specialists.....37,42	Welders, Cutters, Solderers, and Brazers.....45
Cost Estimators.....18	Interior Designers.....20	Procurement Clerks.....22	Wholesale and Retail Buyers.....46
Court Reporters.....22	Judicial Law Clerks.....42	Producers and Directors.....21	Wind Turbine Service Technicians.....17
Crane and Tower Operators.....50	Landscaping and Groundskeeping Workers.....17	Production, Planning, and Expediting Clerks.....44	Writers and Authors.....21
Credit Analysts.....28	Lawyers.....42	Property, Real Estate, and Community Association Managers.....46	Zoologists and Wildlife Biologists.....49
Credit Authorizers, Checkers, and Clerks.....28	Legal Secretaries.....22	Public Relations Specialists.....24	
Credit Counselors.....28	Librarians.....25	Radio and Television Announcers.....20	
Curators.....34	Loan Interviewers and Clerks.....28	Radio, Cellular, and Tower Equipment Installers and Repairers.....20	

AGRICULTURE, FOOD & NATURAL RESOURCES

The production, processing, marketing, distribution, financing, and development of agricultural commodities and resources including food, fiber, wood products, natural resources, horticulture, and other plant and animal products/resources.

		National	ND Outlook 2014-2024			ND Earnings Outlook	
Occupational Title/Description	Holland Code Related Occupations	Number Employed	Number Employed	Total Openings	Long-Term Growth Outlook	Annual Entry-Level Wages Annual Average Wages	Occupational Trait(s)
Postsecondary Programs – High School Diploma, Certificate, or Associate’s Degree							
Agricultural and Food Science Technicians Work with agricultural and food scientists in food, fiber, and animal research, production, and processing. Conduct tests and experiments to improve yield and quality of crops or to increase the resistance of plants and animals to disease or insects.	Realistic	33,000	216	89	Below Avg Growth	\$32,420	
	Dairy Technologist; Feed Research Technician					\$46,110	
Environmental Engineering Technicians Apply theory and principles of environmental engineering to modify, test, and operate equipment and devices used in the prevention, control, and remediation of environmental problems, including waste treatment and site remediation.	Realistic	18,600	26	7	Below Avg Growth	\$42,080	 
	Air Analysis Engineering Technician; Pollution Control Engineering Technician					\$55,960	
Environmental Science and Protection Technicians, Including Health 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.	Investigative	36,200	122	54	Below Avg Growth	\$34,580	 
	Groundwater Monitoring Technician; Pollution Control Technician					\$48,140	
Excavating, Loading Machine and Dragline Operators Operate or tend machinery equipped with scoops, shovels, or buckets, to excavate and load loose materials.	Realistic	53,900	616	72	Zero to Declining Growth	\$39,950	 
	Backhoe Operator; Shovel Operator					\$62,880	
Farm Equipment Mechanics and Service Technicians Diagnose, adjust, repair, or overhaul farm machinery and vehicles, such as tractors, harvesters, dairy equipment, and irrigation systems.	Realistic	40,300	1,238	293	Zero to Declining Growth	\$38,470	
	Combine Mechanic; Irrigation Equipment Mechanic					\$50,510	
Farmworkers and Laborers, Crop, Nursery, and Greenhouse Manually plant, cultivate, and harvest vegetables, fruits, and field crops. Duties may include tilling soil and applying fertilizers; transplanting, weeding, thinning, or pruning crops; applying pesticides; or cleaning, grading, sorting, packing, and loading harvested products.	Realistic	470,200	3,889	1,036	Zero to Declining Growth	\$19,460	
	Greenhouse Transplanter					\$26,820	
Fish and Game Wardens Patrol assigned area to prevent fish and game law violations. Investigate reports of damage to crops or property by wildlife. Compile biological data.	Realistic	6,200	52	19	Below Avg Growth	\$23,720	
	Conservation Enforcement Officer; Wildlife Officer					\$46,830	
Parts Salespersons Sell spare and replacement parts and equipment in repair shop or parts store.	Enterprising	234,700	1,793	398	Zero to Declining Growth	\$24,840	
	Auto Parts Salesperson; Electronic Parts Salesperson					\$39,160	
Rotary Drill Operators, Oil and Gas Set up or operate a variety of drills to remove underground oil and gas, or remove core samples for testing during oil and gas exploration.	Realistic	27,700	1,880	643	Zero to Declining Growth	\$41,670	 
	Oil Well Cable Tool Operator					\$65,370	
Service Unit Operators, Oil, Gas and Mining Operate equipment to increase oil flow from producing wells or to remove stuck pipe, casing, tools, or other obstructions from drilling wells. May also perform similar services in mining exploration operations.	Realistic	64,900	2,785	952	Zero to Declining Growth	\$36,460	 
	Well Servicing Rig Operator					\$55,680	
Veterinary Technologists and Technicians Perform medical tests in a laboratory environment for use in the treatment and diagnosis of diseases in animals.	Realistic	95,600	162	51	High Growth	\$26,790	
	Veterinary Laboratory Technician; Veterinary Surgery Technologist; Veterinary X-Ray Operator					\$35,090	
Water and Wastewater Treatment Plant and System Operators Operate or control an entire process or system of machines, often through the use of control boards, to transfer or treat water or wastewater.	Realistic	117,000	539	205	Avg to Near Avg Growth	\$25,750	
	Liquid Waste Treatment Plant Operator; Sewage Plant Operator					\$43,390	
Postsecondary Programs – Bachelor’s Degree or Higher							
Agricultural Inspectors Inspect agricultural commodities, processing equipment, and facilities, and fish and logging operations, to ensure compliance with regulations and laws governing health, quality, and safety.	Realistic	14,200	260	89	Below Avg Growth	\$27,560	 
	Grain Sampler; Milk Tester					\$37,210	

AGRICULTURE, FOOD & NATURAL RESOURCES

Occupational Title/Description	Holland Code Related Occupations	National	ND Outlook 2014-2024			ND Earnings Outlook	
		Number Employed	Number Employed	Total Openings	Long-Term Growth Outlook	Annual Entry-Level Wages Annual Average Wages	Occupational Trait(s)
Compliance Officers Examine, evaluate, and investigate eligibility for or conformity with laws and regulations governing contract compliance of licenses and permits, and perform other compliance and enforcement inspection and analysis activities not classified elsewhere.	Conventional Driver's License Examiner; Environmental Compliance Inspector	260,300	1,161	264	Below Avg Growth	\$37,750 \$61,440	☀️ 🇺🇸 💰
Conservation Scientists Manage, improve, and protect natural resources to maximize their use without damaging the environment. May instruct in best ways to use crop rotation, contour plowing, or terracing to conserve soil and water.	Investigative Range Ecologist; Soil Conservationist	21,100	277	152	Avg to Near Avg Growth	\$45,150 \$64,340	🔍 🇺🇸 💰
Environmental Engineers Research, design, plan, or perform engineering duties in the prevention, control, and remediation of environmental hazards using various engineering disciplines. Work may include waste treatment, site remediation, or pollution control technology.	Investigative Pollution Control Engineer; Soil Engineer; Water Treatment Engineer	55,100	164	63	Avg to Near Avg Growth	\$55,420 \$79,530	🔍 🇺🇸 💰
Farm and Home Management Advisors Advise, instruct, and assist individuals and families engaged in agriculture, agricultural-related processes, or home economics activities. Includes county agricultural agents, home economists, and extension service advisors.	Social Agricultural Extension Educator; Feed Management Advisor	10,800	210	42	Avg to Near Avg Growth	\$43,450 \$58,950	🔍 🇺🇸 💰
Food Scientists and Technologists Use chemistry, microbiology, engineering, and other sciences to study the principles underlying the processing and deterioration of foods. Apply food science knowledge to determine best ways to process, package, preserve, store, and distribute food.	Investigative Dairy Bacteriologist; Food Safety Scientist	15,400	56	20	Below Avg Growth	\$35,410 \$47,200	🔍



Energy Occupation



Bright Outlook



High Skill



High Wage



Military

ANDREW KREIDT

New Salem-Almont High School

Growing up on a farm helped Andrew develop a love for agriculture and a "do whatever it takes" attitude. He learned the importance of hard work and establishing priorities.

After high school, Andrew attended Bismarck State College for the Agriculture Industry and Technology program. He knew there would be a broad spectrum of jobs available with the Ag Technology degree. He was required to complete an internship as part of the program and BSC hosted a roundtable event for students to network with potential internship sites. Central Dakota Frontier Cooperative in New Salem was at the event and Andrew was hired as an intern. One of the most beneficial aspects of the internship was learning that he loved his chosen career path. After the internship, Andrew was offered a full-time position as Agronomist/Applicator.

According to Andrew, every day is

non-typical and his work schedule closely follows the growing season. Spring and

early summer are the busiest times of year and he often spends 12-15 hours a day in his sprayer. The pace slows down in mid-summer and he spends time scouting fields, fixing equipment, and some limited spraying. He rides with the owners during harvest to build relationships and have conversations about the type of seed needed for next year. Winter brings sales meetings, grower meetings, future planning and rest.

One of the biggest challenges Andrew faces every day is the high cost of product and equipment. He is entrusted with a sprayer worth \$400,000, a semi to haul the sprayer with, and the cost of chemicals to apply to farmer's fields. "There is an immense amount of responsibility placed on my shoulders every day that I am at work. However, with all the responsibilities come great rewards. There is nothing better than to be driving down a road and see a clean field that I sprayed or have a grower come in to say thank you for working extra hours to get their field sprayed. It's also knowing that each day you go to work, you are a part of helping farmers feed the world."












Andrew has many great memories of FFA, but would choose the year he spent as a state officer as one of the best. The opportunity to travel, meet with people, and gain leadership experience has been invaluable to him.

When asked about life after high school, Andrew says it's important to be self-motivated, have a good work ethic, and be ready for your plans to change. Take the initiative to be successful by going to class, remember why you are going to college, and help yourself get a good job.



Cluster: Agriculture, Food & Natural Resources Pathway: Plant Systems

AGRICULTURE, FOOD & NATURAL RESOURCES

Occupational Title/Description	Holland Code Related Occupations	National	ND Outlook 2014-2024			ND Earnings Outlook	Occupational Trait(s)
		Number Employed	Number Employed	Total Openings	Long-Term Growth Outlook	Annual Entry- Level Wages Annual Average Wages	
Foresters Manage public and private forested lands for economic, recreational, and conservation purposes. May determine how to conserve wildlife habitats and how best to comply with environmental regulations.	Realistic Forest Ecologist; Timber Management Specialist	15,500	37	22	Avg to Near Avg Growth	\$37,410 \$50,780	 
Occupational Health and Safety Specialists Review, evaluate, and analyze work environments and design programs and procedures to control, eliminate, and prevent disease or injury caused by chemical, physical, and biological agents or ergonomic factors.	Investigative Environmental Health Sanitarian; Health and Safety Inspector; Industrial Hygienist	70,300	421	84	Zero to Declining Growth	\$61,230 \$88,810	  
Soil and Plant Scientists Conduct research in production, yield, and management of crops and agricultural plants or trees, shrubs, and nursery stock. May classify and map soils and investigate effects of alternative practices on soil and crop productivity.	Investigative Arboreal Scientist; Horticulturist; Plant Physiologist	17,700	239	83	Zero to Declining Growth	\$40,650 \$80,260	
Veterinarians Diagnose, treat, or research diseases and injuries of animals. Includes veterinarians who conduct research and development, inspect livestock, or care for pets and companion animals.	Investigative Veterinary Medicine Scientist	78,300	222	61	Avg to Near Avg Growth	\$62,560 \$91,600	  

North Dakota Agriculture, Food & Natural Resources Related Postsecondary Programs

Pathway	Certificate or Associate's Degree	Bachelor's Degree	Master's Degree or More
Agribusiness Systems	Agribusiness Management (BSC) Agriculture (NDSCS, WSC) Agricultural Sales and Service (DSU) Agriculture transfer (BSC, DCB, NDSCS) Farm Business Management (LRSC) Farm Management Education (BSC) Farm/Ranch Management (BSC, DSU, NDSCS) Precision Agriculture (LRSC)	Agribusiness (NDSU) Agricultural and Biosystems Engineering (NDSU) Agricultural Communication (NDSU) Agricultural Economics (NDSU) Agricultural Education (NDSU) Agricultural Studies (DSU) Agricultural Systems Management (NDSU) General Agriculture (NDSU)	Agribusiness and Applied Economics (NDSU) Agricultural and Biosystems Engineering (NDSU) Agricultural Education (NDSU) Extension Education (NDSU) International Agribusiness (NDSU)
Animal Systems	Animal Science (NDSCS) Pre-Veterinary Medicine transfer (BSC, DCB, TMCC, WSC) Wildlife and Fisheries Technology (DCB) Wildlife Management transfer (DCB, NDSCS, TMCC)	Animal Science (NDSU) Equine Science (NDSU) Fisheries and Wildlife Biology/Science (UND, VCSU) Vet Technology (NDSU)	Animal Science (NDSU)
Environmental Service Systems	Energy Management (BSC) Environmental Science/Technology (DCB, NHSC, SBC, TMCC, UTTC) Home Energy Audit (SBC) Water & Wastewater Technology (BSC)	Environmental Design (NDSU) Environmental Science (DSU, NHSC, SBC, UTTC)	Environmental and Conservation Science (NDSU) Environmental Science (SBC) Environmental Engineering (NDSU, UND)
Food Products & Processing Systems		Food Safety (NDSU) Food Science (NDSU)	Cereal Science (NDSU) Food Safety (NDSU)
Natural Resources Systems	Land Management (DCB) Natural Resources Management (CCCC) Water Treatment Technician (SBC)	Natural Resources Management (NDSU)	Natural Resources Management (NDSU) Energy Systems Engineering (UND)
Plant Systems	Agriculture Industry and Technology-Agronomy (BSC) Aquaponics (DCB) Crop Production Sales & Technology (NDSCS) Urban Forest Management (DCB) Sustainable Vegetable Production (DCB)	Botany (NDSU) Crop and Weed Sciences (NDSU) Horticulture (NDSU) Range Science (NDSU) Soil Science (NDSU)	Botany (NDSU) Horticulture (NDSU) Plant Pathology (NDSU) Plant Sciences (NDSU) Range Science (NDSU) Soil Science (NDSU)
Power, Structure, & Technical Systems	Caterpillar Dealer Service Technician (NDSCS) Diesel Technology: Case IH, Komatsu (NDSCS) Energy Services & Renewable Technician (BSC) John Deere Tech (NDSCS) Nuclear Power Technology (BSC) Oil Drilling/Operations (SBC, TMCC) Petroleum Production Technology (BSC, WSC) Power Plant Technology (BSC) Process Plant/Power Plant Technology (BSC, TMCC) Production Operations/Refinery Training (NHSC) Wind Energy Technician (LRSC)	Energy Management (BSC)	

North Dakota Postsecondary Institutions Offering Agriculture, Food & Natural Resources Related Programs

BSC	Bismarck State College	www.bismarckstate.edu	NDSU	ND State University	www.ndsu.edu
CCCC	Cankdeska Cikana Community College	www.littlehoop.edu	NHSC	Nueta Hidatsa Sahnish College	http://nhsc.edu
DCB	Dakota College at Bottineau	www.dakotacollege.edu	SBC	Sitting Bull College	www.sittingbull.edu
DSU	Dickinson State University	www.dickinsonstate.edu	TMCC	Turtle Mountain Community College	www.tm.edu
LRSC	Lake Region State College	www.lrsc.edu	UND	University of North Dakota	www.und.edu
NDSCS	ND State College of Science	www.ndscs.edu	VCSU	Valley City State University	www.vcsu.edu
			WSC	Williston State College	www.willistonstate.edu

ARCHITECTURE & CONSTRUCTION

Designing, planning, managing, building and maintaining the built environment.

		National	ND Outlook 2014-2024			ND Earnings Outlook	
Occupational Title/Description	Holland Code Related Occupations	Number Employed	Number Employed	Total Openings	Long-Term Growth Outlook	Annual Entry-Level Wages Annual Average Wages	Occupational Trait(s)
Postsecondary Programs – High School Diploma, Certificate, or Associate's Degree							
Architectural and Civil Drafters Prepare detailed drawings of architectural and structural features of buildings or drawings and topographical relief maps used in civil engineering projects, such as highways, bridges, and public works.	Artistic	94,000	334	56	Below Avg Growth	\$37,140	
	Building Drafter; Civil Computer-Aided Design Technician					\$48,650	
Carpenters Construct, erect, install, or repair structures and fixtures made of wood, such as concrete forms; building frameworks, including partitions, joists, studding, and rafters; and wood stairways, window and door frames, and hardwood floors. May also install cabinets, siding, drywall and insulation.	Realistic	945,400	3,256	590	Below Avg Growth	\$31,380	 
	Building Carpenter; Wood Stair Builder; Wood Floor Layer					\$41,710	
Cement Masons and Concrete Finishers Smooth and finish surfaces of poured concrete, such as floors, sidewalks, roads, or curbs using a variety of hand and power tools. Align forms for sidewalks, curbs, or gutters; patch voids; and use saws to cut expansion joints.	Realistic	155,200	1,500	183	Zero to Declining Growth	\$33,420	
	Cement Patcher; Concrete Floor Installer; Pool Installer					\$42,190	
Construction Equipment Operators (Operating Engineers) Operate 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.	Realistic	363,400	4,611	769	Zero to Declining Growth	\$43,720	  
	Bulldozer Operator; Steam Shovel Operator					\$57,910	
Electrical Power-Line Installers and Repairers Install or repair cables or wires used in electrical power or distribution systems. May erect poles and light or heavy duty transmission towers.	Realistic	118,600	830	343	Below Avg Growth	\$48,150	 
	Powerline Examiner; Electrical High Tension Tester					\$67,160	
Electricians Install, maintain and repair electrical wiring, equipment and fixtures. Ensure that work is in accordance with relevant codes.	Realistic	628,800	4,479	684	Zero to Declining Growth	\$39,330	  
	Solar Photovoltaic Electrician					\$61,010	
Heating and Air Conditioning Mechanics Install or repair heating, central air conditioning or refrigeration systems, including oil burners, hot-air furnace and heating stoves.	Realistic	292,000	956	146	Zero to Declining Growth	\$40,190	  
	Plumbers, Sheet Metal Workers					\$60,420	
Landscaping and Groundskeeping Workers Landscape or maintain grounds of property using hand or power tools or equipment. Workers perform a variety of tasks, which may include any combination of the following: sod laying, mowing, trimming, planting, watering, fertilizing, digging, raking, and sprinkler installation.	Realistic	1,167,800	2,753	828	Avg to Near Avg Growth	\$20,920	
	Greenskeeper; Hedge Trimmer					\$29,500	
Maintenance and Repair Workers, General Keep machines, mechanical equipment, or the structure of an establishment in repair. Duties may involve pipe fitting; boiler making; insulating; welding; carpentry; repairing or installing equipment; and repairing buildings, floors, or stairs.	Realistic	1,374,700	3,960	1,185	Below Avg Growth	\$27,800	
	Building Maintenance Mechanic					\$40,170	
Plumbers and Pipefitters Assemble, install, alter, and repair pipelines or pipe systems that carry water, steam, air, or other liquids or gases. May install heating and cooling equipment and mechanical control systems. Includes sprinklerfitters.	Realistic	425,000	1,932	255	Zero to Declining Growth	\$37,260	 
	Fire Sprinkler Installer; Sprinkler Fitter					\$53,040	
Structural Iron and Steel Workers Raise, place and unite iron or steel girders, columns and other structural members to form structures or structural frameworks.	Realistic	61,400	323	65	Below Avg Growth	\$38,710	 
	Bridge Ironworker; Precast Concrete Ironworker					\$54,190	
Supervisors of Construction Trades Workers Directly supervise and coordinate activities of construction or extraction workers.	Enterprising	578,400	5,381	427	Zero to Declining Growth	\$50,440	
	Quarry Boss; Rig Supervisor					\$77,170	
Surveying and Mapping Technicians Perform surveying and mapping duties to obtain data used for construction, mapmaking, boundary location, and mining. May calculate mapmaking information and create maps from surveying notes, aerial photography, satellite data, or other maps.	Realistic	57,300	229	26	Zero to Declining Growth	\$27,910	 
	Field Map Technician; GIS Mapping Technician					\$44,420	
Wind Turbine Service Technicians Inspect, diagnose, adjust, or repair wind turbines. Perform maintenance on wind turbine equipment including resolving electrical, mechanical, and hydraulic malfunctions.	Realistic	4,400	158	177	Exceptional	\$46,560	  
	Wind Energy Technician					\$60,110	

 **Energy Occupation**

















 **Bright Outlook**

 **High Skill**

 **High Wage**

 **Military**

ARCHITECTURE & CONSTRUCTION

		National	ND Outlook 2014-2024			ND Earnings Outlook	
Occupational Title/Description	Holland Code Related Occupations	Number Employed	Number Employed	Total Openings	Long-Term Growth Outlook	Annual Entry-Level Wages Annual Average Wages	Occupational Trait(s)
Postsecondary Programs – Bachelor’s Degree or Higher							
Architects Plan and design structures, such as private residences, office buildings, theaters, factories, and other structural property.	Artistic	112,600	281	80	Avg to Near Avg Growth	\$47,040	 
	Architectural Designer; Structural Architect					\$71,640	
Civil Engineers Perform engineering duties in planning, designing, and overseeing construction and maintenance of building structures, and facilities, such as roads, railroads, airports, bridges, dams, irrigation projects, pipelines, power plants, and water and sewage systems.	Realistic	281,400	1,105	504	Avg to Near Avg Growth	\$53,140	 
	Bridge Engineer; Highway Engineer					\$77,870	
Construction Managers Plan, organize, direct, and coordinate through subordinate personnel activities concerned with erection, alteration, maintenance, and repair of structures, facilities, and systems such as houses, office buildings, bridges, roads, and similar structures.	Enterprising	373,200	845	118	Zero to Declining Growth	\$60,270	 
	Construction Superintendent; General Contractor					\$94,910	
Cost Estimators Prepare cost estimates for product manufacturing, construction projects or services to aid management in bidding or determining price of product or service.	Conventional	213,500	673	192	Zero to Declining Growth	\$37,040	 
	Job Cost Estimator; Production Cost Estimator					\$58,910	
Materials Engineers Develop machinery and processes to manufacture materials for use in products that must meet specialized design and performance specifications. Develop new uses for known materials.	Investigative	25,300	28	17	High Growth	\$58,310	
	Automotive Sheet Metal Engineer; Forensic Materials Engineer; Metallographer					\$73,740	
Surveyors Make exact measurements and determine property boundaries. Provide data relevant to shape, contour, gravitation, location, elevation, or dimension of land or land features.	Realistic	44,300	402	142	Below Avg Growth	\$46,330	 
	Land Surveyor; Mineral Surveyor					\$66,220	 



Energy Occupation



Bright Outlook



High Skill



High Wage



Military

North Dakota Architecture & Construction Related Postsecondary Programs

Pathway	Certificate or Associate's Degree	Bachelor's Degree	Master's Degree or More
Construction	Building Construction Technology (NDSCS, TMCC) Building Trades (SBC) Carpentry (BSC, BJCC, CCCC) Concrete Technology (BJCC, TMCC) Construction Management/Technology (CCCC, NDSCS, NHSC) Electrical Technology (NDSCS, SBC, TMCC) Framing (SBC) Heating, Ventilation & Air Conditioning (BSC, CCCC, NDSCS, TMCC) Interior Construction (SBC) Land Surveying and Civil Engineering Technology (NDSCS) Plumbing (NDSCS) Residential Electric (TMCC)	Construction Engineering (NDSU) Construction Management (NDSU)	Construction Management (NDSU)
Design/Pre-Construction	Architectural Drafting and Estimating Technology (NDSCS) Land Surveying and Civil Engineering Technology (NDSCS)	Architecture (NDSU) Civil Engineering (NDSU) Construction Engineering (NDSU) Landscape Architecture (NDSU)	Architecture (NDSU) Civil Engineering (NDSU)
Maintenance/Operations	Mechanical Systems (NDSCS) Mechanical Maintenance Technology (BSC)		

North Dakota Postsecondary Institutions Offering Architecture & Construction Related Programs

BSC	Bismarck State College	www.bismarckstate.edu	NDSU	ND State University	www.ndsu.edu
BJCC	Burdick Job Corps Center	http://quentinnburdick.jobcorps.gov	NHSC	Nueta Hidatsa Sahnish College	http://nhsc.edu
CCCC	Cankdeska Cikana Community College	www.littlehoop.edu	SBC	Sitting Bull College	www.sittingbull.edu
NDSCS	ND State College of Science	www.ndscs.edu	TMCC	Turtle Mountain Community College	www.tm.edu

JADE HEILMAN Wilton High School



Jade's first career choice was personal trainer. Towards the end of the program, she realized it was not something she wanted to continue, and she started looking for other opportunities. Jade learned about the need for electricians and the Joint Apprenticeship and Training Committee (JATC) from a friend. She applied for the program and was soon involved full-time.

As an apprentice with JATC, Jade typically works 40 hours a week with Western Edge Electric in Bismarck. There are two nights per week of classroom and lab training.

Jade is accumulating 8,000 work hours and 900 school hours. She is currently in the third year of five years total, and has completed

approximately 5,000 work hours. After earning enough work and classroom hours, she will take the Journeymen Exam through the ND State Electrical Board. After licensure there will be a year of work, or the completion of 2,000 hours to achieve Journeymen status. At that point, Jade will decide if she wants to move on to Master Electrician.

There is a lot of variety at the job-sites. She might be bending conduit or wiring a house. There is also a lot of electrical service work. She usually works with a journeyman on small remodeling projects, and new construction that is both commercial and residential.

Being an electrician can be physically demanding at times. It requires some heavy lifting and other labor-intensive tasks. For Jade, working on

a project from start to finish and taking pride in the completed work is a sign of success. Being involved in the JATC program was appealing because it allowed her to work full time and earn a living while getting an education. She will not have any student loans to repay after the program is finished.



Cluster: *Architecture & Construction* Pathway: *Construction*



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Apprenticeship offers opportunities to earn a salary while learning the skills necessary to succeed in high-demand careers. Apprentices complete a combination of industry-specific classroom education and hands-on career training leading to nationally recognized certifications.

**Must be 16 or older to apply.*

ARTS, A/V TECHNOLOGY & COMMUNICATIONS

Designing, producing, exhibiting, performing, writing, and publishing multimedia content including visual and performing arts and design, journalism, and entertainment services.

		National	ND Outlook 2014-2024			ND Earnings Outlook	
Occupational Title/Description	Holland Code Related Occupations	Number Employed	Number Employed	Total Openings	Long-Term Growth Outlook	Annual Entry-Level Wages Annual Average Wages	Occupational Trait(s)
Postsecondary Programs – High School Diploma, Certificate, or Associate’s Degree							
Audio and Video Equipment Technicians 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.	Realistic	70,900	87	40	High Growth	\$26,410	 
	Multimedia Production Assistant; Video Control Operator					\$45,190	
Desktop Publishers Format typescript and graphic elements using computer software to produce publication-ready material.	Artistic	14,800	105	28	Zero to Declining Growth	\$27,260	
	Electronic Publisher					\$41,030	
Electronic Home Entertainment Equip. Installers and Repairers Repair, adjust, or install audio or television receivers, stereo systems, camcorders, video systems, or other electronic home entertainment equipment.	Realistic	29,600	277	39	Zero to Declining Growth	\$31,250	
	Home Theater Installer; Satellite Dish Installer; Wireless Internet Installer					\$46,830	
Photographers Photograph people, landscapes, merchandise, or other subjects, using digital or film cameras and equipment. May develop negatives or use computer software to produce finished images and prints. Includes scientific photographers, aerial photographers, and photojournalists.	Artistic	124,900	165	41	Below Avg Growth	\$23,070	
	Medical Photographer; Wedding Photographer					\$35,530	
Radio and Television Announcers Speak or read from scripted materials, such as news reports or commercial messages, on radio or television. May announce artist or title of performance, identify station, or interview guests.	Artistic	42,300	245	71	Zero to Declining Growth	\$20,680	
	Game Show Host; Talk Show Host					\$32,730	
Radio, Cellular, and Tower Equipment Installers and Repairers Repair, install or maintain radio transmitting, broadcasting and receiving equipment, and two-way radio communications systems used in cellular telecommunications, mobile broadband, aircraft-to-ground communications, and radio equipment.	Realistic	13,600	58	11	Avg to Near Avg Growth	\$28,860	
	Radio Frequency Technician; Two-Way Radio Technician					\$48,080	
Telecommunications Equipment Installers and Repairers Service or repair telephone, cable television, Internet, and other communications equipment on customers’ property. May install communications equipment or communications wiring in buildings.	Realistic	218,600	580	113	Avg to Near Avg Growth	\$45,220	  
	Fiber Optic Installer; Private Branch Exchange (PBX) Installer and Repairer					\$64,010	
Telecommunications Line Installers and Repairers Install and repair telecommunications cable, including fiber optics.	Realistic	118,000	271	49	Zero to Declining Growth	\$39,730	
	Cable Television Installer; FIOS Line Installer					\$58,690	
Postsecondary Programs – Bachelor’s Degree or Higher							
Commercial and Industrial Designers Develop and design manufactured products, such as cars, home appliances, and children’s toys. Combine artistic talent with research on product use, marketing, and materials to create the most functional and appealing product design.	Artistic	38,400	35	10	Below Avg Growth	\$30,210	
	Automobile Designer; Package Designer					\$44,030	
Film and Video Editors Edit moving images on film, video, or other media. May edit or synchronize soundtracks with images.	Artistic	33,500	58	29	High Growth	\$39,170	
	Cue Selector; Film Editor; Television News Video Editor					\$66,990	
Graphic Designers Design or create graphics to meet a client’s specific commercial or promotional needs, such as packaging, displays or logos.	Artistic	261,600	717	171	Zero to Declining Growth	\$29,250	 
	Catalogue Illustrator					\$40,740	
Interior Designers Plan, design, and furnish interiors of residential, commercial, or industrial buildings. Formulate design which is practical, aesthetic, and conducive to intended purposes, such as raising productivity, selling merchandise, or improving life style.	Artistic	58,900	111	37	Below Avg Growth	\$32,080	
	Home Lighting Advisor; Kitchen Designer					\$48,160	
Multimedia Artists and Animators Create special effects, animation, or other visual images using film, video, computers, or other electronic tools and media for use in products or creations, such as computer games, movies, music videos, and commercials.	Artistic	64,400	45	8	Zero to Declining Growth	\$43,490	 
	Special Effects Artist; 3D Animator					\$57,150	

 **Energy Occupation**



 **Bright Outlook**

 **High Skill**

 **High Wage**

 **Military**

ARTS, A/V TECHNOLOGY & COMMUNICATIONS

		National	ND Outlook 2014-2024			ND Earnings Outlook	
Occupational Title/Description	Holland Code Related Occupations	Number Employed	Number Employed	Total Openings	Long-Term Growth Outlook	Annual Entry-Level Wages Annual Average Wages	Occupational Trait(s)
Postsecondary Programs – Bachelor’s Degree or Higher							
Museum Technicians and Conservators Restore, maintain, or prepare objects in museum collections for storage, research, or exhibit. May work with fossils, skeletal parts, or botanicals; or artifacts, textiles, or art. May identify and record objects or install and arrange them in exhibits.	Realistic	11,300	13	4	Zero to Declining Growth	\$34,670	
	Ethnographic Materials Conservator; Museum Exhibit Technician; Textile Conservator					\$50,340	
Producers and Directors Produce or direct stage, television, radio, video, or motion picture productions for entertainment, information, or instruction. Responsible for creative decisions, such as script, choice of actors or guests, set design, sound, special effects, and choreography.	Enterprising	122,600	202	76	Below Avg Growth	\$24,770	
	Casting Director; Independent Film Maker					\$38,590	
Writers and Authors Writers and authors develop written content for advertisements, books, magazines, movie and television scripts, songs, and online publications.	Enterprising	136,500	318	69	Below Avg Growth	\$25,530	
	Advertising Copy Writer; Playwright					\$40,920	



Energy Occupation



Bright Outlook



High Skill



High Wage



Military

North Dakota Arts, A/V Technology & Communications Related Postsecondary Programs










Pathway	Certificate or Associate's Degree	Bachelor's Degree	Master's Degree or More
Audio and Video Technology and Film	Digital Audio Production (BSC) Web Page Development and Design (BSC, NDSCS)	Multimedia Studies (MiSU) New Media & Web Design (NDSU)	Library/Information Technology (VCSU)
Journalism and Broadcasting	English transfer (BSC, DCB, TMCC) Mass Communications (BSC) Speech Communication transfer (BSC)	Broadcasting (MiSU) Communication (DSU, MaSU, MiSU, UJ, UND, VCSU) English (DSU, MaSU, MiSU, NDSU, UJ, UM, UND, VCSU) English Education (DSU, MaSU, MiSU, NDSU, UM, VCSU) Journalism/Professional Writing (NDSU) Mass Communications (UM)	Communication (NDSU) English (NDSU) Mass Communications (NDSU) Speech Communication (NDSU)
Performing Arts	Music transfer (BSC, NDSCS, TMCC, WSC) Theatre Arts - Performance (BSC) Theatre Arts – Technical Theatre (BSC)	Music (DSU, MiSU, NDSU, UJ, UM, UND, VCSU) Music Education (DSU, MiSU, UM, UND, VCSU) Music Performance (UM, UND) Musical Theatre (UND) Theatre Arts (DSU, MiSU, NDSU, UND) Theatre Education (MiSU)	Music (NDSU, UND) Theatre Arts (NDSU)
Printing Technology		Print Communications Concentration (MiSU)	
Telecommunications	Electronics Technology (BSC) Electronics/Telecommunications Technology (BSC)	Communication (DSU, MaSU, MiSU, UJ, UND, VCSU) Strategic Communication (NDSU)	
Visual Arts	Art transfer (DCB, TMCC) Fine Art (CCCC) Graphic Arts/Design (CCCC, RC, UTTC) Graphic Design & Communications (BSC) Photography (DCB) Visual Art transfer (BSC)	Apparel, Retail Merchandising, and Design (NDSU) Art/Art Studies (DSU, MiSU, NDSU, UJ, VCSU) Arts Administration (MiSU) Art Education (DSU, MiSU, NDSU, VCSU) Art Entrepreneurship (DSU) Fine Arts (MiSU) Graphic Design (RC) Graphic Design & New Art Media (UND) Graphic Design Technology (UND) Interior Design (NDSU) Visual Arts (UND)	Visual Arts (UND)

North Dakota Postsecondary Institutions Offering Arts, A/V Technology & Communications Related Programs

















BSC	Bismarck State College	www.bismarckstate.edu	RC	Rasmussen College	www.rasmussen.edu
CCCC	Cankdeska Cikana Community College	www.littlehoop.edu	TMCC	Turtle Mountain Community College	www.tm.edu
DCB	Dakota College at Bottineau	www.dakotacollege.edu	UTTC	United Tribes Technical College	www.uttcc.edu
DSU	Dickinson State University	www.dickinsonstate.edu	UJ	University of Jamestown	www.uj.edu
MaSU	Mayville State College	www.mayvillestate.edu	UM	University of Mary	www.umary.edu
MiSU	Minot State University	www.minotstate.edu	UND	University of North Dakota	www.und.edu
NDSCS	ND State College of Science	www.ndscs.edu	VCSU	Valley City State University	www.vcsu.edu
NDSU	ND State University	www.ndsu.edu	WSC	Williston State College	www.willistonstate.edu

BUSINESS MANAGEMENT & ADMINISTRATION

Planning, organizing, directing and evaluating business functions
essential to efficient and productive business operations.

		National	ND Outlook 2014-2024			ND Earnings Outlook	
Occupational Title/Description	Holland Code Related Occupations	Number Employed	Number Employed	Total Openings	Long-Term Growth Outlook	Annual Entry-Level Wages Annual Average Wages	Occupational Trait(s)
Postsecondary Programs – High School Diploma, Certificate, or Associate's Degree							
Advertising Sales Agents Sell or solicit advertising space, time, or media in publications, signage, TV, radio, or the Internet. Includes individuals who obtain leases for outdoor advertising sites or persuade retailers to use sales promotion display items.	Enterprising	167,900	626	185	Zero to Declining Growth	\$24,100	
	Advertising Account Executive; Display Sales Representative					\$48,450	
Billing and Posting Clerks Compile, compute, and record billing, accounting, statistical, and other numerical data for billing purposes. Prepare billing invoices for services rendered or for delivery or shipment of goods.	Conventional	514,600	984	347	Avg to Near Avg Growth	\$27,520	
	Invoice Control Clerk; Patient Account Representative; Statement Processor					\$37,000	
Bookkeeping, Accounting, and Auditing Clerks Compute, classify, and record numerical data to keep financial records complete. Perform any combination of routine calculating, posting, and verifying duties to obtain primary financial data for use in maintaining accounting records.	Conventional	1,760,300	7,588	744	Zero to Declining Growth	\$27,620	
	Accounts Receivable Clerk; Bookkeeper; Mortgage Accounting Clerk					\$38,320	
Court Reporters Use verbatim methods and equipment to capture, store, retrieve, and transcribe pretrial and trial proceedings. Includes stenographers who operate computerized stenographic equipment to provide captions of live or prerecorded broadcasts for hearing-impaired viewers.	Conventional	20,800	85	21	Below Avg Growth	\$37,520	 
	Court Stenographer; Court Transcriber; Deposition Reporter					\$49,410	
Customer Service Representatives Interact with customers to provide information in response to inquiries about products and services and to handle and resolve complaints.	Enterprising	2,581,800	6,956	2,843	Avg to Near Avg Growth	\$25,860	
	Customer Complaint Clerk; Warranty Clerk					\$34,680	
Insurance Claims and Policy Processing Clerks Process new insurance policies, modifications to existing policies, and claims forms. Update existing policies and company records to reflect changes requested by policyholders and insurance company representatives.	Conventional	285,400	449	213	High Growth	\$30,410	
	Insurance Policy Issue Clerk; Underwriting Clerk					\$38,490	
Legal Secretaries Perform secretarial duties using legal terminology, procedures, and documents. Prepare legal papers and correspondence, such as summonses, complaints, motions, and subpoenas. May also assist with legal research.	Conventional	215,500	326	34	Zero to Declining Growth	\$31,920	
	Law Secretary; Legal Administrative Assistant					\$38,990	
Medical Secretaries Perform secretarial duties using specific knowledge of medical terminology and hospital, clinic, or laboratory procedures. Duties may include scheduling appointments, billing patients, and compiling and recording medical charts, reports, and correspondence.	Conventional	527,600	535	184	High Growth	\$25,640	
	Dental Secretary; Psychiatric Secretary					\$34,810	
Payroll and Timekeeping Clerks Compile and record employee time and payroll data. May compute employees' time worked, production, and commission. May compute and post wages and deductions, or prepare paychecks.	Conventional	172,800	629	169	Zero to Declining Growth	\$31,670	
	Time and Attendance Clerk					\$40,580	
Procurement Clerks Compile information and records to draw up purchase orders for procurement of materials and services.	Conventional	72,300	437	152	Zero to Declining Growth	\$31,050	
	Purchasing Clerk					\$40,550	
Receptionists and Information Clerks Answer inquiries and provide information to the general public, customers, and visitors regarding activities conducted at establishment and location of departments, offices, and employees within the organization.	Conventional	1,028,600	2,239	809	Below Avg Growth	\$20,580	
	Appointment Clerk; Front Desk Receptionist					\$28,970	
Secretaries and Administrative Assistants Perform routine clerical and administrative functions such as drafting correspondence, scheduling appointments, organizing and maintaining paper and electronic files, or providing information to callers.	Conventional	2,457,000	7,607	1,075	Below Avg Growth	\$28,580	
	Office Secretary; School Secretary					\$38,050	
Stock Clerks and Order Fillers Receive, store, and issue sales floor merchandise, materials, equipment, and other items from stockroom, warehouse, or storage yard to fill shelves, racks, tables, or customers' orders. May mark prices on merchandise and set up sales displays.	Conventional	1,878,100	5,184	1,999	Below Avg Growth	\$20,790	
	Inventory Control Clerk; Tool Crib Attendant; Warehouse Clerk					\$29,210	
Supervisors of Office/Administrative Support Workers Directly supervise and coordinate the activities of clerical and administrative support workers.	Enterprising	1,466,100	3,662	984	Avg to Near Avg Growth	\$38,520	 
	Clerical Supervisor; Payroll Supervisor					\$56,450	

BUSINESS MANAGEMENT & ADMINISTRATION

		National	ND Outlook 2014-2024			ND Earnings Outlook	
Occupational Title/Description	Holland Code Related Occupations	Number Employed	Number Employed	Total Openings	Long-Term Growth Outlook	Annual Entry-Level Wages Annual Average Wages	Occupational Trait(s)
Postsecondary Programs – Bachelor’s Degree or Higher							
Accountants and Auditors Examine, analyze, and interpret accounting records to prepare financial statements, give advice, or audit and evaluate statements prepared by others. Install or advise on systems of recording costs or other financial and budgetary data.	Conventional	1,332,700	4,183	1,763	Avg to Near Avg Growth	\$39,180	   
	Certified Public Accountant; Internal Auditor					\$58,340	
Administrative Services Managers 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 services.	Enterprising	287,300	674	176	Below Avg Growth	\$53,720	  
	Facilities Manager; Records and Information Manager					\$83,410	
Budget Analysts Examine budget estimates for completeness, accuracy, and conformance with procedures and regulations. Analyze budgeting and accounting reports.	Conventional	60,800	115	30	Below Avg Growth	\$51,860	  
	Budget Examiner; Cost Analyst					\$64,600	
General and Operations Managers Plan, direct, or coordinate the operations of public or private sector organizations. Duties and responsibilities include formulating policies, managing daily operations, and planning the use of materials and human resources.	Enterprising	2,124,100	7,369	2,146	Below Avg Growth	\$57,700	  
	General Superintendent; Television Station Manager					\$103,040	
Human Resources Specialists Perform activities in the human resource area. Includes employment specialists who screen, recruit, interview, and place workers.	Enterprising	482,000	1,193	349	Below Avg Growth	\$39,060	  
	Personnel Recruiter; Staffing Coordinator					\$56,060	

JENNA MCKAY Grafton High School

Jenna knew she wanted to have a career in fashion and marketing while in high school. She took classes in Family and Consumer Science, Marketing, and Business. "I had some great teachers who encouraged me and got me involved in Career and Technical Student Organizations (CTSOs). As a member of both FCCLA and DECA, I was given opportunities to explore careers and develop skills to help me plan my future. She enrolled in the Apparel, Retail Merchandising and Design program at NDSU and joined FABO, the Fashion Apparel and Business Organization. The college major appealed to Jenna because it allowed for flexibility in a student's program of study. The curriculum incorporates both an international and historical focus. She participated in study tours, read fashion magazines, kept in touch with fashion on social media and networked with many people working in the industry.

Jenna has worked at SHANNALEE, a boutique in downtown Fargo, since the spring of her freshman year of college. She was able to fulfill

the internship requirement of her degree at the boutique. Because of her previous work history as a fashion stylist, she was able to step immediately into the marketing and business side of the boutique during the internship. She coordinated new projects such as trunk shows and pop-up shops, promoted the boutique on social media, and worked on improving customer service. The internship resulted in a promotion to assistant manager.

Currently as boutique manager, Jenna has the responsibility of opening, merchandising the floor, greeting clients and helping them with their apparel needs. She completes purchase orders, unpacks and tags merchandise, and assists her boss with buying decisions. She often works on special promotions and projects. She has also been involved with interviewing and training of employees.

According to Jenna, high school is a great time to take a variety of classes. Seize the opportunities to develop leadership skills such as joining FCCLA. Get involved in projects, competing and volunteer! "My experiences in FCCLA taught me valuable skills that helped me grow in high school and prepared me for









college and career."

For those entering their first career, Jenna says everyone needs to be ready to work hard, nurture your emotional intelligence, learn from your mistakes and persevere. Speaking as a millennial, "The future depends on us and we need to continue to learn, improve our skills, and lead." After six years of working at SHANNALEE, she is continually working to keep her job skills and soft skills sharp.

Cluster: Business Management & Administration Pathway: General Management

BUSINESS MANAGEMENT & ADMINISTRATION

		National	ND Outlook 2014-2024			ND Earnings Outlook	
Occupational Title/Description	Holland Code Related Occupations	Number Employed	Number Employed	Total Openings	Long-Term Growth Outlook	Annual Entry-Level Wages Annual Average Wages	Occupational Trait(s)
Postsecondary Programs – Bachelor’s Degree or Higher							
Management Analysts 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.	Investigative	758,000	660	222	Avg to Near Avg Growth	\$45,030	
	Business Management Analyst; Business Process Consultant					\$72,500	
Public Relations Specialists 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.	Enterprising	240,700	599	132	Avg to Near Avg Growth	\$35,500	
	Press Secretary; Publicity Writer					\$55,110	
Training and Development Specialists Design and conduct training and development programs to improve individual and organizational performance. May analyze training needs.	Social	252,600	556	225	Avg to Near Avg Growth	\$38,980	
	Computer Training Specialist; Workforce Development Specialist					\$58,400	



Energy Occupation



Bright Outlook



High Skill



High Wage



Military

North Dakota Business Management & Administration Related Postsecondary Programs

Pathway	Certificate or Associate's Degree	Bachelor's Degree	Master's Degree or More
Administrative Support	Administrative Assistant (BSC, DCB, LRSC, NHSC) Bookkeeping (DCB) Business/Office Technology (CCCC) Computer Applications (CCCC) Computer Support Specialist (TMCC) Office Administration (BJCC, DSU) Reception Services (DCB)		
Business Information Management	Accounting Technician (DCB, TMCC) Business Management (MaSU, NDSCS, RC, UTTC, WSC) Business Technology Management (NDSCS) Computer Information Systems/Technology (DCB, UTTC) Cybersecurity and Computer Networks (BSC) Information Processing Specialist (BSC) Information Technology/Management (DCB, LRSC, NDSCS, NHSC, RC, SBC, WSC) Management Information Systems (NDSCS) Small Business Management (DCB)	Applied Business Information Technology (MiSU) Business Communication (UM) Business Process Integration Management (VCSU) Computer Information Systems (UM) Information Systems (UND) Information Technology Management (RC, UM) Management Communication (NDSU) Management Information Systems (MiSU, NDSU) New Media and Web Design (NDSU)	Information Systems (MiSU)
General Management	Business Administration (BSC, CCCC, DCB, LRSC, NDSCS, NHSC, SBC, TBC, TMCC, UTTC) Business Education transfer (BSC, DCB) Computerized Office Management (DCB) Computer Support Specialist (BSC, TMCC) Entrepreneurship (NDSCS, TMCC) Management (BSC) Management Entrepreneurship (BSC) Management Supervision (NDSCS)	Business Administration (DSU, MaSU, NDSU, SBC, TBC, UTTC, UJ, UM, VCSU) Business Education (DSU, MiSU, UM, VCSU) Entrepreneurship (UND) International Business (MiSU) Management (MiSU, NDSU, RC) Public Administration (UND)	Business (UM) Business Administration (NDSU, UM, UND) Management (MiSU) Project Management (UM) Public Administration (UM, UND)
Human Resources Management	HR and Organizational Leadership (RC)	Human Resource Management (DSU, UND) Human Resources and Organizational Leadership (RC)	
Operations Management		Business Economics (UND) Business Management (RC, UM) Business Analysis (RC) Management Communication (NDSU) Operations & Supply Chain Management (UND)	

North Dakota Postsecondary Institutions Offering Business Management & Administration Related Programs

BSC	Bismarck State College	www.bismarckstate.edu	RC	Rasmussen College - Fargo	www.rasmussen.edu
BJCC	Burdick Job Corps Center	http://quentinnburdick.jobcorps.gov	SBC	Sitting Bull College	www.sittingbull.edu
CCCC	Cankdeska Cikana Community College	www.littlehoop.edu	TBC	Trinity Bible College	www.trinitybiblecollege.edu
DCB	Dakota College at Bottineau	www.dakotacollege.edu	TMCC	Turtle Mountain Community College	www.tm.edu
DSU	Dickinson State University	www.dickinsonstate.edu	UTTC	United Tribes Technical College	www.uttc.edu
LRSC	Lake Region State College	www.lrsc.edu	UJ	University of Jamestown	www.uj.edu
MaSU	Mayville State College	www.mayvillemstate.edu	UM	University of Mary	www.umary.edu
MiSU	Minot State University	www.minotstate.edu	UND	University of North Dakota	www.und.edu
NDSCS	ND State College of Science	www.ndscs.edu	VCSU	Valley City State University	www.vcsu.edu
NDSU	ND State University	www.ndsu.edu	WSC	Williston State College	www.willistonstate.edu
NHSC	Nueta Hidatsa Sahnish College	http://nhsc.edu			

EDUCATION & TRAINING

Planning, managing and providing education and training services, and related learning support services.

		National	ND Outlook 2014-2024			ND Earnings Outlook	
Occupational Title/Description	Holland Code Related Occupations	Number Employed	Number Employed	Total Openings	Long-Term Growth Outlook	Annual Entry-Level Wages Annual Average Wages	Occupational Trait(s)
Postsecondary Programs – High School Diploma, Certificate, or Associate's Degree							
Fitness Trainers and Aerobics Instructors 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.	Social Personal Trainer; Yoga Instructor	279,100	885	253	Avg to Near Avg Growth	\$19,710 \$29,990	
Preschool Teachers, Except Special Education 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 Head Start Teacher; Nursery School Teacher; Pre-Kindergarten Teacher	441,000	718	340	Avg to Near Avg Growth	\$20,830 \$34,280	☀️
Self-Enrichment Education Teachers Teach or instruct courses other than those that normally lead to an occupational objective or degree. Courses may include self-improvement, non-vocational, and non-academic subjects.	Social Citizenship Teacher; Horseback Riding Instructor	348,700	658	302	High Growth	\$18,280 \$31,620	☀️
Teacher Assistants 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.	Social Instructional Aide; Special Education Classroom Aide	1,234,100	5,019	1,770	Avg to Near Avg Growth	\$24,330 \$31,020	☀️
Postsecondary Programs – Bachelor's Degree or Higher							
Career/Technical Education Teachers, Secondary School Teach occupational, career and technical, or vocational subjects at the secondary school level in public or private schools.	Social Auto Repair Teacher; Vocational Education Teacher	79,600	374	107	Below Avg Growth	\$40,830 \$52,720	🧠💰
Education Administrators, Elementary and Secondary School Plan, direct, or coordinate the academic, administrative, or auxiliary activities of public or private elementary or secondary level schools.	Enterprising Curriculum Administrator	240,000	499	197	Avg to Near Avg Growth	\$65,440 \$89,210	🧠💰
Educational, Guidance, School, and Vocational Counselors Counsel individuals and provide group educational and vocational guidance services.	Social Career Counselor; Student Development Advisor	273,400	701	228	Avg to Near Avg Growth	\$40,660 \$54,370	🧠💰
Elementary School Teachers, Except Special Education Teach students basic academic, social, and other formative skills in public or private schools at the elementary level.	Social Elementary Band Director; 4th Grade Math Teacher	1,358,000	4,283	1,394	Avg to Near Avg Growth	\$39,790 \$79,320	☀️🧠💰
Instructional Coordinators Develop instructional material, coordinate educational content, and incorporate current technology in specialized fields that provide guidelines to educators and instructors.	Social Curriculum and Assessment Director; Special Education Curriculum Specialist	151,100	291	56	Below Avg Growth	\$40,760 \$65,150	🧠💰
Librarians Administer libraries and perform related library services. Select, acquire, catalogue, circulate, and maintain library materials; and furnish reference, bibliographical, and readers' advisory services. May set up or work with databases and information systems to catalogue and access information.	Conventional Law Librarian; Music Librarian; School Librarian	143,100	468	116	Below Avg Growth	\$25,300 \$46,620	
Nursing Instructors and Teachers, Postsecondary Demonstrate and teach patient care in classroom and clinical units to nursing students. Includes both teachers primarily engaged in teaching and those who do a combination of teaching and research.	Social Clinical Nursing Professor; Registered Nursing Professor	68,600	165	63	High Growth	\$52,080 \$79,100	☀️🧠💰
Special Education Teachers, Kindergarten and Elementary School Teach elementary school subjects to educationally and physically handicapped students. Includes teachers who specialize and work with audibly and visually handicapped students and those who teach basic academic and life processes skills.	Social Severe Emotional Disorders Teacher; Special Education Preschool Teacher	198,100	679	198	Avg to Near Avg Growth	\$41,990 \$51,270	🧠💰

 **Energy Occupation**

 **Bright Outlook**

 **High Skill**

 **High Wage**

 **Military**

EDUCATION & TRAINING

North Dakota Education & Training Related Postsecondary Programs

Pathway	Certificate or Associate's Degree	Bachelor's Degree	Master's Degree or More
Administration & Administration Support			Educational Leadership (NDSU, UND)
Professional Support Services	American Sign Language Studies (LRSC) Child Development Associate (DCB) Communication Disorders transfer (WSC) Paraprofessional Educator (DCB) Speech Language Pathology Assistant (LRSC, WSC)	Communication Sciences & Disorders (MiSU, UND) Communication (DSU) Interpreting & Sign Language Studies (MiSU)	Communication Sciences and Disorders (UND) Counseling (NDSU) Counseling Psychology and Comm. Services (UND) Counseling with K-12 School Emphasis (UND) Library and Information Technologies (VCSU) School Psychology (MiSU)
Teaching/Training	Business Education transfer (BSC, DCB) Early Childhood Education transfer (BSC, CCCC, DCB, LRSC, MaSU, NDSCS, NHSC, RC, SBC) Education transfer (NDSCS, SBC) Elementary Education transfer (BSC, DCB, NHSC, UTTC) Health, Physical Education and Recreation (CCCC, NDSCS, UTTC) Lakhotiyapi/Dakhotiyapi I/II (SBC) Middle School Education transfer (WSC) Physical Education transfer (BSC, DCB) Secondary Education transfer (BSC, DCB, WSC) Special Education transfer (DCB, WSC)	Agriculture Education (NDSU) Art Education (DSU, MiSU, NDSU, VCSU) Biological Science Educ. (DSU, MaSU, MiSU, NDSU, UM, VCSU) Business Education (DSU, MiSU, UM, VCSU) Career and Technical Education (VCSU) Chemistry Education (DSU, MaSU, MiSU, NDSU, VCSU) Communication Arts Education (MiSU) Comprehensive Science Education (NDSU) Early Childhood Educ. (MaSU, MiSU, RC, SBC, UM, UND) Earth Science Education (MiSU, NDSU) Elementary Education (DSU, MaSU, MiSU, NHSC, SBC, TBC, UTTC, UM, UND, VCSU) English as a Second Language-ESL (UJ) English Education (DSU, MaSU, MiSU, NDSU, UM, VCSU) Family & Consumer Sciences Education (NDSU) French Education (NDSU) German Education (MiSU) Health Education (MaSU, NDSU, VCSU) History Education (DSU, MiSU, NDSU, UM, VCSU) Intellectual Developmental Disabilities (MiSU) Math Education (DSU, MaSU, MiSU, NDSU, UJ, UM, UND, VCSU) Music Education (DSU, MiSU, UM, UND, VCSU) Physical Educ. (DSU, MaSU, MiSU, NDSU, TBC, UM, VCSU) Physics Education (NDSU) Science Education (UND) Social Science Educ. (DSU, MaSU, MiSU, NDSU, UND, VCSU) Spanish Education (MiSU, NDSU) Special Education (MaSU, MiSU, UM) Teacher Education (TMCC) Technology Education (DSU, VCSU) Theatre Arts Education (MiSU)	Agriculture Education (NDSU) Curriculum, Instruction, and Assessment (SBC, UM, UND) Early Childhood Education (UND) Education (MiSU, NDSU, UJ, UM, UND, VCSU) Education Leadership (NDSU, UND) Elementary Administration/Education (UM, UND) English Language Learner (ELL) Education (UND) Family & Consumer Sciences Education (NDSU) Instructional Design and Technology (UND) Linguistics (UND) Music Education (MiSU) Reading Education (UND) Special Education (MiSU, UND) Teaching (MaSU, VCSU)

North Dakota Postsecondary Institutions Offering Education & Training Related Programs

BSC	Bismarck State College	www.bismarckstate.edu	RC	Rasmussen College - Fargo	www.rasmussen.edu
CCCC	Cankdeska Cikana Community College	www.littlehoop.edu	SBC	Sitting Bull College	www.sittingbull.edu
DCB	Dakota College at Bottineau	www.dakotacollege.edu	TBC	Trinity Bible College	www.trinitybiblecollege.edu
DSU	Dickinson State University	www.dickinsonstate.edu	TMCC	Turtle Mountain Community College	www.tm.edu
LRSC	Lake Region State College	www.lrsc.edu	UTTC	United Tribes Technical College	www.uttc.edu
MaSU	Mayville State College	www.mayvillestate.edu	UJ	University of Jamestown	www.uj.edu
MiSU	Minot State University	www.minotstate.edu	UM	University of Mary	www.umary.edu
NDSCS	ND State College of Science	www.ndscs.edu	UND	University of North Dakota	www.und.edu
NDSU	ND State University	www.ndsu.edu	VCSU	Valley City State University	www.vcsu.edu
NHSC	Nueta Hidatsa Sahnish College	http://nhsc.edu	WSC	Williston State College	www.willistonstate.edu

Power Up Your Future!

Opportunities are available in energy industries:


- Biofuel
- Coal
- Geothermal
- Hydropower
- Natural Gas
- Petroleum
- Recovered Energy
- Solar
- Wind



Training is available for energy industry jobs:

North Dakota colleges and universities, including private and tribal, have programs for certificate and degree options that can be completed in 1, 2, or 4 years. More information on the college programs can be found at *RUReady.ND.gov*.

Information can be found here:

Look for the  in the Occupational Section, pages 12-51 for energy occupations in North Dakota.

Energy industry jobs can also be found at *<http://jobsnd.com>*

		National	ND Outlook 2014-2024			ND Earnings Outlook	
Occupational Title/Description	Holland Code Related Occupations	Number Employed	Number Employed	Total Openings	Long-Term Growth Outlook	Annual Entry-Level Wages Annual Average Wages	Occupational Trait(s)
Postsecondary Programs – High School Diploma, Certificate, or Associate’s Degree							
Bank Tellers Receive and pay out money for financial institutions. Keep records of money and negotiable instruments involved in various transactions.	Conventional Foreign Exchange Clerk; Securities Teller	520,500	1,600	731	Below Avg Growth	\$23,700 \$29,820	
Brokerage Clerks Perform duties related to the purchase, sale or holding of securities. Duties include purchases or sales, computing transfer taxes, accepting and delivering securities, tracking price fluctuations, and keeping daily records of transactions.	Conventional Commodities Clerk; Dividend Clerk	57,200	62	29	High Growth	\$35,480 \$48,710	
Claims Adjusters, Examiners, and Investigators Review settled claims to determine that payments and settlements are made in accordance with company practices and procedures. Confer with legal counsel on claims requiring litigation.	Conventional Fire Claims Adjuster; Property and Casualty Insurance Claims Examiner	299,700	883	391	Avg to Near Avg Growth	\$29,630 \$48,830	
Credit Authorizers, Checkers, and Clerks Authorize credit charges against customers’ accounts. Investigate history and credit standing of individuals or business establishments applying for credit.	Conventional Charge Authorizer; Commercial Credit Reviewer; Credit Rating Checker	46,100	232	36	Below Avg Growth	\$31,710 \$37,610	
Insurance Claims and Policy Processing Clerks Process new insurance policies, modifications to existing policies, and claims forms. Update existing policies and company records to reflect changes requested by policyholders and insurance company representatives.	Conventional Insurance Policy Issue Clerk; Underwriting Clerk	285,400	449	213	High Growth	\$30,410 \$38,490	
Insurance Sales Agents Sell life, property, casualty, health, automotive, or other types of insurance. May refer clients to independent brokers, work as an independent broker, or be employed by an insurance company.	Enterprising Life Insurance Salesperson; Pension Agent	466,100	1,738	813	High Growth	\$30,290 \$59,720	
Loan Interviewers and Clerks Interview loan applicants; investigate applicants’ backgrounds and verify references; and forward findings, reports, and documents to appraisal department. Complete transactions between loan establishment, borrowers, and sellers upon approval of loan.	Conventional Loan Processor; Mortgage Loan Closer	108,800	526	211	High Growth	\$31,140 \$39,390	
Postsecondary Programs – Bachelor’s Degree or Higher							
Credit Analysts Analyze credit data and financial statements of individuals or firms to determine the degree of risk involved in extending credit or lending money. Prepare reports with credit information for use in decision making.	Conventional Credit Assessment Analyst; Credit Risk Analyst	69,400	180	117	High Growth	\$42,150 \$58,720	
Credit Counselors Advise and educate individuals or organizations on acquiring and managing debt. May help develop debt management plans, advise on credit issues, or provide budget, mortgage, and bankruptcy counseling.	Enterprising Debt Management Counselor; Financial Assistance Advisor	32,600	77	31	High Growth	\$31,620 \$49,900	
Financial Analysts Conduct quantitative analyses of information affecting investment programs of public or private institutions.	Conventional Corporate Securities Research Analyst	277,600	287	125	High Growth	\$49,090 \$75,090	
Financial Managers Plan, direct, or coordinate accounting, investing, banking, insurance, securities, and other financial activities of a branch, office, or department of an establishment.	Conventional Comptroller; Financial Director	555,900	973	372	Avg to Near Avg Growth	\$68,850 \$114,320	
Loan Officers Evaluate, authorize, or recommend approval of commercial, real estate, or credit loans. Advise borrowers on financial status and payment methods. Includes mortgage loan officers, collection analysts, loan servicing officers, and loan underwriters.	Conventional Commercial Lender; Loan Reviewer; Real Estate Loan Officer	303,200	1,118	442	High Growth	\$45,560 \$70,560	
Sales Agents, Securities Buy and sell stocks and bonds based on customers’ orders. Give advice and furnish client with information regarding possible purchases, market conditions, and prospects.	Enterprising Investment Banker; Securities Trader	341,500	449	177	High Growth	\$35,600 \$90,980	
Tax Preparers Prepare tax returns for individuals or small businesses.	Conventional Tax Advisor; Licensed Tax Consultant	90,400	148	52	Avg to Near Avg Growth	\$28,060 \$50,510	

FINANCE

North Dakota Finance Related Postsecondary Programs

Pathway	Certificate or Associate's Degree	Bachelor's Degree	Master's Degree or More
Accounting	Accounting (RC, WSC) Accounting/Business Administration (LRSC) Accounting transfer (BSC, DCB) Accounting Technician (DCB, DSU, TMCC)	Accounting (DSU, MiSU, NDSU, RC, UJ, UM, UND) Business Administration (VCSU) Managerial Finance and Accounting (UND)	Accountancy (NDSU)
Banking Services	Economics transfer (BSC, DCB, WSC)	Banking and Financial Economics (UND) Financial Services and Banking (UM) Economics (NDSU, UJ, UND)	Applied Economics (UND)
Business Finance	Business Management (MaSU, NDSCS, WSC) Business Finance (DCB, NDSCS)	Business Administration (VCSU) Energy Economics and Finance (MiSU) Finance (DSU, MiSU, NDSU, RC)	
Insurance	Marketing (LRSC, RC) Marketing/Entrepreneurship (NHSC) Marketing Management (DCB, NDSCS)	Marketing (MiSU, NDSU, RC, UM, UND)	
Securities & Investments		Financial Planning and Wealth Management (UJ) Investments (UND)	

North Dakota Postsecondary Institutions Offering Finance Related Programs

BSC	Bismarck State College	www.bismarckstate.edu	NDSU	ND State University	www.ndsu.edu
CCCC	Cankdeska Cikana Community College	www.littlehoop.edu	RC	Rasmussen College - Fargo	www.rasmussen.edu
DCB	Dakota College at Bottineau	www.dakotacollege.edu	TMCC	Turtle Mountain Community College	www.tm.edu
DSU	Dickinson State University	www.dickinsonstate.edu	UJ	University of Jamestown	www.uj.edu
LRSC	Lake Region State College	www.lrsc.edu	UM	University of Mary	www.umary.edu
MaSU	Mayville State University	www.mayvillestate.edu	UND	University of North Dakota	www.und.edu
MiSU	Minot State University	www.minotstate.edu	VCSU	Valley City State University	www.vcsu.edu
NDSCS	ND State College of Science	www.ndscs.edu	WSC	Williston State College	www.willistonstate.edu

NICK NUPDAL Red River High School

Nick was curious about DECA while in high school, and a marketing class gave him the opportunity to learn more. Going to his first district rally was the beginning of many years of involvement in the organization. He enjoyed competing at the state level for three years, and qualified for nationals twice. He continues to be involved through Advisory Committees, and has made many friends and professional contacts. Nick gives credit to the DECA program for helping him build skills and confidence.

As he neared high school graduation, Nick wanted to work in the business world, but didn't know which area of business he should study in college. He enjoyed creating marketing plans and had an interest in management or business ownership. He compared his college options in Colorado, Washington and University of North Dakota. Financially speaking, UND made the most sense for him because he planned to live

in the region after completing his degree.

Taking finance classes while in college helped

Nick to narrow down his business and marketing interests, and he switched to a management and finance major. Initially, Nick was drawn to learning about the stock market, investment activities and the returns that could be achieved through decision-making. Later on, he explored financing activities, business cash flows, and lending practices.

Nick is a Business Banking Specialist with American Federal Bank in Fargo. He creates financial plans with business owners to help them reach their goals. His work varies, but he often spends time meeting with current and prospect clients each week. There is also time dedicated to working with his mentors on a personal development plan that includes learning more about system and product knowledge, and training delivered via real world case studies and modules.

Nick is new to the Fargo area and getting connected to the community is something he continues to work on. He has lived in both Bismarck and Grand Forks, and the majority of his professional contacts are in those two cities. Nick says, "The biggest success is finding a job that you genuinely enjoy with an



organization that shares the same values as you. There are pros and cons to all jobs, but you need to be passionate about what you do."










"Start with a plan and write it down. Have some short term and long term goals in mind. It might be scary to share your goals, but you will accomplish much more in life because of the accountability it creates."



Cluster: Finance Pathway: Business Finance

GOVERNMENT & PUBLIC ADMINISTRATION

Planning and performing government functions at the local, state and federal levels, including governance, national security, foreign service, planning, revenue and taxation, and regulations.

		National	ND Outlook 2014-2024			ND Earnings Outlook	
Occupational Title/Description	Holland Code Related Occupations	Number Employed	Number Employed	Total Openings	Long-Term Growth Outlook	Annual Entry-Level Wages Annual Average Wages	Occupational Trait(s)
Postsecondary Programs – High School Diploma, Certificate, or Associate’s Degree							
Eligibility Interviewers, Government Programs Determine eligibility of persons applying to receive assistance from government programs and agency resources, such as welfare, unemployment benefits, social security, and public housing.	Social	129,900	436	100	Avg to Near Avg Growth	\$35,220	
	Unemployment Benefits Claims Taker					\$44,550	
Postmasters and Mail Superintendents Plan, direct, or coordinate operational, administrative, management, and supportive services of a U.S. post office.	Enterprising	17,300	118	26	Zero to Declining Growth	\$40,130	 
	Postal Supervisor; Postmaster					\$58,470	
Postsecondary Programs – Bachelor’s Degree or Higher							
Emergency Management Directors Plan and direct disaster response or crisis management activities, provide disaster preparedness training, and prepare emergency plans and procedures.	Social	10,500	77	15	Below Avg Growth	\$41,950	  
	Disaster Response Director					\$71,570	
Financial Examiners Enforce or ensure compliance with laws and regulations governing financial and securities institutions and financial and real estate transactions. May examine, verify, or authenticate records.	Enterprising	38,200	133	58	Avg to Near Avg Growth	\$42,740	 
	Bank Examiner					\$71,870	
Tax Examiners and Collectors, and Revenue Agents Determine tax liability or collect taxes from individuals or business firms according to prescribed laws and regulations.	Conventional	67,900	91	39	Below Avg Growth	\$37,540	 
	Internal Revenue Service Agent					\$62,890	

North Dakota Government & Public Administration Related Postsecondary Programs

Pathway	Certificate or Associate's Degree	Bachelor's Degree	Master's Degree or More
Foreign Service	American Sign Language and Interpreting Studies (LRSC) Spanish transfer (WSC)	Chinese Studies (UND) French (NDSU, UJ, UND) German (MiSU, UJ, UND) International Studies (UND) Norwegian (UND) Spanish (DSU, MiSU, NDSU, UJ, UM, UND)	
Governance	Dakota Studies (CCCC) History transfer (BSC, DCB, TMCC) Native American Studies (NHSC, SBC, TMCC) Political Science transfer (BSC, TMCC, WSC)	American Indian Studies (UND) Government & Political Philosophy (UM) History (DSU, MiSU, NDSU, UJ, UM, UND, VCSU) Native American Studies (NHSC) Political Science (DSU, NDSU, UJ, UND) Public Administration (UND) Public History (NDSU)	History (NDSU, UND) Public Administration (UM, UND) Public Health (NDSU, UND)
National Security	Military Science (BSC)	Unmanned Aircraft Systems Operations (UND) Military Science/ROTC (NDSU, UND)	
Planning	Economics transfer (BSC, DCB)	Behavioral Statistics (NDSU) Economics (NDSU, UND) Energy Economics and Finance (MiSU)	Community Development (NDSU) Transportation and Urban Systems (NDSU)
Public Management & Administration	Emergency Management transfer (NDSCS) Land Management (DCB)	Emergency Management (NDSU) Public Health Education (UND) Public Policy (UM)	Emergency Management (NDSU)
Regulation		Public Administration (UND) Public History (NDSU) Public Policy (UM)	
Revenue & Taxation	Accounting (BSC, DCB, DSU, LRSC, RC, TMCC, WSC)	Accounting (DSU, MiSU, NDSU, RC, UJ, UM, UND)	Accountancy (NDSU)

North Dakota Postsecondary Institutions Offering Government & Public Administration Related Programs

BSC	Bismarck State College	www.bismarckstate.edu	RC	Rasmussen College - Fargo	www.rasmussen.edu
CCCC	Cankdeska Cikana Community College	www.littlehoop.edu	SBC	Sitting Bull College	www.sittingbull.edu
DCB	Dakota College at Bottineau	www.dakotacollege.edu	TMCC	Turtle Mountain Community College	www.tm.edu
DSU	Dickinson State University	www.dickinsonstate.edu	UJ	University of Jamestown	www.uj.edu
LRSC	Lake Region State College	www.lrsc.edu	UM	University of Mary	www.umary.edu
MiSU	Minot State University	www.minotstateu.edu	UND	University of North Dakota	www.und.edu
NDSU	ND State University	www.ndsu.edu	VCSU	Valley City State University	www.vcsu.edu
NHSC	Nueta Hidatsa Sahnish College	http://nhsc.edu	WSC	Williston State College	www.willistonstate.edu

HEALTH SCIENCE

Planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.

		National	ND Outlook 2014-2024			ND Earnings Outlook	
Occupational Title/Description	Holland Code Related Occupations	Number Employed	Number Employed	Total Openings	Long-Term Growth Outlook	Annual Entry-Level Wages Annual Average Wages	Occupational Trait(s)
Postsecondary Programs – High School Diploma, Certificate, or Associate’s Degree							
Cardiovascular Technologists Conducts tests on pulmonary and/or cardiovascular systems of patients for diagnostic purposes. May conduct or assist in electrocardiograms and cardiac catheterizations.	Realistic Catheterization Technologist; EKG Technician	52,000	100	53	High Growth	\$27,430 \$46,720	  
Dental Assistants Tasks range from providing patient care and taking X-rays to recordkeeping and scheduling appointments. Duties vary by state and by the dentists’ offices where they work.	Conventional Certified Dental Assistant; Orthodontic Assistant	318,800	674	296	Avg to Near Avg Growth	\$34,610 \$43,400	  
Dental Hygienists Clean teeth, examine patients for signs of oral diseases such as gingivitis, and provide other preventative dental care. They also educate patients on ways to improve and maintain good oral health.	Social Oral Hygienist, Dental Assistant	200,500	624	223	Avg to Near Avg Growth	\$56,330 \$65,500	   
Dental Laboratory Technicians Construct and repair full or partial dentures or dental appliances.	Realistic Crown Technician; Orthodontic Technician	38,700	125	50	Avg to Near Avg Growth	\$26,950 \$39,730	
Diagnostic Medical Sonographers Produce ultrasonic recordings of internal organs for use by physicians.	Investigative Ultrasound Technologist	60,700	97	51	High Growth	\$55,270 \$68,190	  
Emergency Medical Technicians Assess injuries, administer emergency medical care, and extricate trapped individuals. Transport injured or sick persons to medical facilities.	Social Flight Paramedic	241,200	1,032	475	High Growth	\$17,640 \$31,960	  
Home Health Aides Provide routine individualized healthcare at the patient’s home or in a care facility. Monitor or report changes in health status. May also provide personal care such as bathing, dressing, and grooming of patient.	Social Home Health Attendant; Home Hospice Aide	913,500	1,320	665	High Growth	\$26,720 \$33,170	
Medical and Clinical Laboratory Technicians Perform routine tests in medical laboratory. Prepare tissues, draw blood samples, do urinalysis and blood counts. Work under the direction of a medical technologist.	Realistic Pathology Technician; Cytogenetic Technologist	163,400	270	123	High Growth	\$33,350 \$42,530	  
Medical Records and Health Information Technicians Compile, process, and maintain medical records of hospital and clinic patients in a manner consistent with medical, administrative, ethical, legal, and regulatory requirements of the health care system.	Conventional Health Information Coder; Medical Records Specialist	188,600	901	409	High Growth	\$31,410 \$42,030	  
Nurses, Licensed Practical Care of ill, injured, convalescent or disabled persons in hospitals, nursing homes, clinics, private homes, group homes and other similar settings.	Social Certified Nurse Assistant; Registered Nurse	719,900	2,923	1,321	Avg to Near Avg Growth	\$35,110 \$43,200	  
Nurses, Registered Assess patient health problems and needs, develop and implement nursing care plans and maintain medical records. Administer nursing care to ill, injured, or disabled patients. May specialize in areas as profusionist, nurse anesthetist and other areas.	Social Coronary Care Unit Nurse; Psychiatric Nurse	2,751,000	8,392	4,030	High Growth	\$49,150 \$60,840	   
Nursing Assistants Provide basic patient care under direction of nursing staff. Perform duties such as feed, bathe, dress, groom, or move patients, or change linens. Includes nursing care attendants, nursing aides, and nursing attendants.	Social Certified Nursing Assistant; Nursing Care Attendant	1,492,100	7,163	3,102	High Growth	\$26,380 \$31,600	  
Occupational Therapy Assistants Assist occupational therapists in providing occupational therapy treatments and procedures.	Social Physical Therapist Assistants	33,000	76	45	High Growth	\$34,150 \$46,540	 
Ophthalmic Medical Technicians Assist ophthalmologists by performing ophthalmic clinical functions. May administer eye exams, administer eye medications, and instruct the patient in care and use of corrective lenses.	Conventional Ocular Care Technologist	37,000	99	36	High Growth	\$28,300 \$39,520	 
Pharmacy Technicians Assist licensed pharmacists dispense prescription medication to customers or health professionals.	Conventional Pharmacist; Pharmacy Assistant	372,500	689	166	Avg to Near Avg Growth	\$30,990 \$38,510	

 **Energy Occupation**

 **Bright Outlook**

 **High Skill**

 **High Wage**

 **Military**

HEALTH SCIENCE

		National	ND Outlook 2014-2024			ND Earnings Outlook	
Occupational Title/Description	Holland Code Related Occupations	Number Employed	Number Employed	Total Openings	Long-Term Growth Outlook	Annual Entry-Level Wages Annual Average Wages	Occupational Trait(s)
Postsecondary Programs – High School Diploma, Certificate, or Associate’s Degree							
Radiologic Technologists Take X-rays and CAT scans or administer non-radioactive materials into patient’s blood stream for diagnostic purposes. May also operate computed topography or magnetic resonance.	Realistic Computed Tomography (CT) Scanner Operator; X-ray Technician	197,000	443	146	Avg to Near Avg Growth	\$40,880 \$53,040	  
Respiratory Therapists Assess, treat, and care for patients with breathing disorders. Initiate and conduct therapeutic procedures; maintain patient records; and select, assemble, check, and operate equipment.	Social Inhalation Therapist; Oxygen Therapist; Registered Respiratory Therapist	120,700	293	124	Avg to Near Avg Growth	\$44,140 \$52,900	 
Surgical Technologists Assist in operations, under supervision of surgeons, registered nurses or other surgical personnel.	Realistic Operating Room (OR) Tech; Surgical Scrub Technologist	99,800	318	108	High Growth	\$34,100 \$41,500	  
Postsecondary Programs – Bachelor’s Degree or Higher							
Athletic Trainers Evaluate and advise individuals to assist recovery from or avoid athletic-related injuries or illnesses, or maintain peak physical fitness. May provide first aid or emergency care.	Social Fitness Trainer	25,400	55	21	Avg to Near Avg Growth	\$31,470 \$38,560	
Chiropractors Adjust spinal column and other articulations of the body to correct abnormalities of the human body believed to be caused by interference with the nervous system. Examine patient to determine nature and extent of disorder.	Social Chiropractic Physician, Physical Therapists	45,200	310	112	Avg to Near Avg Growth	\$29,890 \$70,010	 
Dentists Diagnose and treat problems with a patient’s teeth, gums, and related parts of the mouth. They provide advice and instruction on taking care of teeth and gums and on diet choices that affect oral health.	Investigative Maxillofacial Surgeon, Dental Hygienist	129,000	253	101	Avg to Near Avg Growth	\$99,600 \$202,240	  
Dietitians and Nutritionists Plan and conduct food service or nutritional programs to assist in the promotion of health and control of disease.	Investigative Clinical Dietitian, Public Health Nutritionist	66,700	212	57	Avg to Near Avg Growth	\$31,940 \$48,990	 
Health Educators Provide and manage health education programs that help individuals, families, and their communities maximize and maintain healthy lifestyles. Identify community needs prior to planning, implementing, monitoring, and evaluating programs.	Social Diabetes Educator; Public Health Educator	61,400	375	122	High Growth	\$36,300 \$50,370	
Medical and Health Services Managers Plan, direct, or coordinate medical and health services in hospitals, clinics, managed care organizations, public health agencies, or similar organizations.	Enterprising Clinic Director; Hospital Administrator	333,000	843	393	High Growth	\$59,420 \$97,770	  
Medical Scientists, Except Epidemiologists Conduct research dealing with the understanding of human diseases and the improvement of human health. Engage in clinical investigation, research and development, or other related activities.	Investigative Cancer Researcher; Toxicologist	107,900	27	14	High Growth	\$43,860 \$65,880	 
Mental Health Counselors Work with individuals and groups to promote optimum mental and emotional health. Includes issues associated with addictions and substance abuse; family, parenting; stress management; self-esteem; and aging.	Social Licensed Clinical Mental Health Counselor (LCMHC)	134,500	84	37	High Growth	\$33,560 \$49,780	 
Occupational Therapists Assess, plan, organize and participate in rehabilitative programs that help restore vocational, homemaking and daily living skills, as well as general independence, to disabled persons.	Social Physical Therapists	114,600	410	200	High Growth	\$52,110 \$64,900	   
Optometrists Diagnose, manage, and treat conditions and diseases of the human eye and visual system. Examine eyes and visual system, diagnose problems or impairments, prescribe corrective lenses, and provide treatment.	Investigative Ophthalmologist, Optician	40,600	164	105	High Growth	\$55,940 \$120,310	   
Physical Therapists Assess, plan, organize and participate in rehabilitative programs that improve mobility, relieve pain, increase strength and decrease or prevent deformity of patients suffering from disease or injury.	Social Geriatric Physical Therapist; Physiotherapist	210,900	552	321	High Growth	\$62,250 \$73,800	   
Physician Assistants Provide healthcare services typically performed by a physician, under the supervision of a physician. Conduct complete physicals, provide treatment and counsel patients.	Social Physician Assistant; Nurse Practitioner	94,400	296	157	High Growth	\$78,610 \$114,810	   
Rehabilitation Counselors Counsel individuals to maximize the independence and employability of persons coping with personal, social, and vocational difficulties that result from birth defects, illness, disease, accidents, or the stress of daily life.	Social Veterans Rehabilitation Counselor	120,100	231	90	Avg to Near Avg Growth	\$31,890 \$45,130	 



Energy Occupation



Bright Outlook



High Skill







High Wage



Military

HEALTH SCIENCE

		National	ND Outlook 2014-2024			ND Earnings Outlook	
Occupational Title/Description	Holland Code Related Occupations	Number Employed	Number Employed	Total Openings	Long-Term Growth Outlook	Annual Entry-Level Wages Annual Average Wages	Occupational Trait(s)
Postsecondary Programs – Bachelor’s Degree or Higher							
Speech-Language Pathologists Assess and treat persons with speech, language, voice, and fluency disorders. May select alternative communication systems and teach their use. May perform research related to speech and language problems.	Social Public School Speech Therapist; Speech Clinician	135,400	580	276	High Growth	\$48,510 \$67,580	 
Substance Abuse and Behavioral Disorder Counselors Counsel and advise individuals with alcohol, tobacco, drug, or other problems, such as gambling and eating disorders. May counsel individuals, families, or groups or engage in prevention programs.	Social Addiction Counselor; Chemical Dependency Counselor	94,900	316	117	Avg to Near Avg Growth	\$44,010 \$53,680	 



Energy Occupation



Bright Outlook



High Skill



High Wage



Military

North Dakota Health Science Related Postsecondary Programs			
Pathway	Certificate or Associate's Degree	Bachelor's Degree	Master's Degree or More
Biotechnology Research & Development	Biotechnology transfer (NDSCS) Pharmacy Technician (NDSCS, RC)	Bioinformatics (MiSU) Biotechnology (NDSU) Pharmaceutical Sciences (NDSU)	Biomedical Sciences (UND) Genomics and Bioinformatics (NDSU) Pharmaceutical Sciences (NDSU)
Diagnostic Services	Clinical Laboratory Science transfer (NDSCS) Communication Disorders transfer (WSC) Dialysis Technician (NDSCS) EMT – Paramedic Technician (BSC, DCB, NDSCS) Medical Assistant (DCB) Medical Laboratory Technician (BSC, RC, TMCC) Phlebotomy Technician (BSC, TMCC) Speech Language Pathology Assistant (WSC)	Medical Lab Science (MaSU, MiSU, NDSU, UM, UND, VCSU) Communication Sciences and Disorders (UM, UND) Radiologic Science/Technology (MiSU, NDSU, UM)	Medical Lab Science (UND)
Health Informatics	Community Health (SBC, UTTC) Health Information Technician/Management (DCB, NDSCS, RC) Medical Administrative Asst. (BSC, DCB, RC) Medical Coding/Billing (DCB, NDSCS, RC, UTTC, WSC)	Community Nutrition (UND) Forensic Science (UND) Health Science (VCSU) Health Information Management (RC) Healthcare Administration (UM) Health Communication (NDSU)	Health Care Administration (UM) Public Health (NDSU, UND)
Support Services	Caregiver Services (DCB) Environmental Public Health (TMCC) Fitness Trainer Technician (LRSC) Social Work transfer (BSC, CCCC, NDSCS, TMCC, WSC)	Anatomy and Physiology I & II (MaSU) Fitness and Wellness (MaSU) Exercise Science (DSU, NDSU, TBC, UM) Exercise Science and Sport Management (VCSU) Kinesiology (UJ, UND) Social Work (MiSU, UM, UND)	Clinical Exercise Physiology (UM) Kinesiology (UM) Kinesiology & Public Health Education (UND) Social Work (UND) Sports Management (MiSU)
Therapeutic Services	Addictions Studies Transfer (NHSC, WSC) Dental Assisting/Hygiene (NDSCS) Health/Medical Assistant (BJCC, DCB) Health Professions transfer (DCB) Massage Therapy (JSHDF, JSHDGF, TSPA, WSC) Nursing (BSC, CCCC, DCB, LRSC, NDSCS, RC, SBC, WSC) Occupational Therapy Assistant (NDSCS) Practical Nursing (BSC, DCB, DSU, NDSCS, NHSC, SBC, TMCC, UTTC, WSC) Pre-Professional transfer (BSC, DCB, NDSCS, TMCC, WSC) Surgical Technology (BSC)	Addiction Studies (MiSU) Athletic Training (MiSU, UM, UND, VCSU) Corporate Fitness (MiSU) Dietetics (NDSU, UND) Nursing (DSU, MaSU, MiSU, NDSU, UJ, UM, UND) Pharmaceutical Sciences (NDSU) Pre-Professional programs (MaSU, MiSU, UM) Rehabilitation and Human Services (UND) Respiratory Care/Therapy (NDSU, UM)	Athletic Training (NDSU) Dietetics (NDSU) Health, Nutrition and Exercise Science (NDSU) Nursing (NDSU, UM, UND) Nutrition & Dietetics (UND) Occupational Therapy (UM, UND) Pharmaceutical Sciences (NDSU) Physical Therapy (UJ, UM, UND) Physician Assistant (UND) Respiratory Therapy (UM) Speech-Language Pathology (MiSU)


North Dakota Postsecondary Institutions Offering Health Science Related Programs

BSC	Bismarck State College	www.bismarckstate.edu	NHSC	Nueta Hidatsa Sahnish College	http://nhsc.edu
BJCC	Burdick Job Corps Center	http://quentinnburdick.jobcorps.gov	RC	Rasmussen College - Fargo	www.rasmussen.edu
CCCC	Cankdeska Cikana Community College	www.littlehoop.edu	SBC	Sitting Bull College	www.sittingbull.edu
DCB	Dakota College at Bottineau	www.dakotacollege.edu	TSPA	The Salon Professional Academy	www.tspafargo.com
DSU	Dickinson State University	www.dickinsonstate.edu	TMCC	Turtle Mountain Community College	www.tm.edu
LRSC	Lake Region State College	www.lrsc.edu	UTTC	United Tribes Technical College	www.uttc.edu
JSHDF	Josef's School of Hair Design - Fargo	josefsschoolofhairdesign.com	UJ	University of Jamestown	www.uj.edu
JSHDGF	Josef's School of Hair Design - Grand Forks	josefsschoolofhairdesign.com	UM	University of Mary	www.umary.edu
MaSU	Mayville State University	www.mayvillestate.edu	UND	University of North Dakota	www.und.edu
MiSU	Minot State University	www.minotstate.edu	VCSU	Valley City State University	www.vcsu.edu
NDSCS	ND State College of Science	www.ndscs.edu	WSC	Williston State College	www.willistonstate.edu
NDSU	ND State University	www.ndsu.edu			

HOSPITALITY & TOURISM

The management, marketing and operations of restaurants and other food services, lodging, attractions, recreation events and travel related services.

		National	ND Outlook 2014-2024			ND Earnings Outlook	
Occupational Title/Description	Holland Code Related Occupations	Number Employed	Number Employed	Total Openings	Long-Term Growth Outlook	Annual Entry-Level Wages Annual Average Wages	Occupational Trait(s)
Postsecondary Programs – High School Diploma, Certificate, or Associate’s Degree							
Amusement and Recreation Attendants Perform variety of attending duties at amusement or recreation facility. May schedule use of recreation facilities, maintain and provide equipment to participants of sporting events or recreational pursuits, or operate amusement concessions and rides.	Enterprising Arcade Attendant; Golf Caddy; Ski Lift Operator	288,600	1,066	549	Below Avg Growth	\$17,290 \$22,250	☀️
Animal Trainers Train animals for riding, harness, security, performance, or obedience, or assisting persons with disabilities. Accustom animals to human voice and contact; and condition animals to respond to commands.	Realistic Guide Dog Trainer; Horse Breaker; Marine Mammal Trainer	36,800	119	55	Avg to Near Avg Growth	\$25,300 \$28,640	
Bakers Mix and bake ingredients to produce breads, rolls, cookies, cakes, pies, pastries, or other baked goods.	Realistic Bagel Maker; Pastry Finisher	185,300	690	220	Avg to Near Avg Growth	\$22,250 \$29,980	🇺🇸
Food Service Managers Plan, direct, or coordinate activities of an organization or department that serves food and beverages.	Enterprising Banquet Director; Food Service Director	305,000	511	159	Avg to Near Avg Growth	\$37,730 \$56,050	💰 🇺🇸
Hosts and Hostesses Welcome patrons, seat them at table or in lounge, and help ensure quality of facilities and service.	Enterprising Dining Room Host, Maitre D’	376,400	1,061	879	Avg to Near Avg Growth	\$17,310 \$20,150	☀️
Hotel, Motel, and Resort Desk Clerks Accommodate hotel, motel, and resort patrons by assigning rooms to guests, transmitting and receiving messages, keeping records of guests’ accounts, making reservations, and collecting payments from departing guests.	Conventional Hotel Front Desk Clerk; Hotel Registration Clerk	243,200	1,878	971	Zero to Declining Growth	\$19,880 \$25,850	🇺🇸
Lodging Managers Plan, direct, or coordinate activities of an organization or department that provides lodging and other accommodations.	Enterprising Bed and Breakfast Innkeeper; Hotel Manager	48,400	159	31	Zero to Declining Growth	\$36,060 \$58,030	💰 🇺🇸
Maids and Housekeeping Cleaners Perform any combination of light cleaning duties to maintain private households or commercial establishments, such as hotels and hospitals, in a clean and orderly manner. Duties may include making beds, replenishing linens, cleaning rooms and halls, and vacuuming.	Realistic Chambermaid; House Cleaner; Housekeeping Staff	1,457,700	5,695	1,436	Below Avg Growth	\$19,390 \$24,870	
Recreation Workers Organize and promote activities, such as arts and crafts, sports, games, music, dramatics, social recreation, camping, and hobbies, taking into account the needs and interests of individuals or groups.	Social Activities Aide; Camp Counselor; Playground Worker	379,300	757	270	Avg to Near Avg Growth	\$20,360 \$30,820	☀️ 🇺🇸
Tour Guides Escort individuals or groups on sightseeing tours or through places of interest, such as industrial establishments, public buildings, and art galleries.	Social Historical Site Guide; Museum Guide	43,500	245	110	Below Avg Growth	\$17,420 \$21,190	
Travel Agents Plan itineraries and arrange accommodations and other travel services for customers. May plan and sell package tours. Compute costs, make hotel reservations, and collect payment.	Enterprising Travel Service Consultant, Reservation Agent	74,100	142	22	Zero to Declining Growth	\$25,230 \$34,160	
Waiters and Waitresses Take orders and serve food and beverages to patrons at tables in dining establishment.	Social Flight Attendants, Hosts and Hostesses	2,465,100	7,616	4,365	Below Avg Growth	\$17,210 \$21,100	☀️
Postsecondary Programs – Bachelor’s Degree or Higher							
Curators Administer collections, such as artwork, collectibles, historic items, or scientific specimens of museums or other institutions. May conduct instructional, research, or public service activities of institution.	Enterprising Photography and Prints Curator	13,100	42	16	Below Avg Growth	\$33,780 \$46,310	🧠 🇺🇸
Meeting, Convention, and Event Planners Coordinate activities of staff, convention personnel, or clients to make arrangements for group meetings, events, or conventions.	Enterprising Conference Planner; Wedding Planner	100,000	221	51	Avg to Near Avg Growth	\$34,410 \$48,060	🧠

 **Energy Occupation**

 **Bright Outlook**

 **High Skill**

 **High Wage**

 **Military**

HOSPITALITY & TOURISM

North Dakota Hospitality And Tourism Related Postsecondary Programs

Pathway	Certificate or Associate's Degree	Bachelor's Degree	Master's Degree or More
Lodging	Advertising & Marketing (DCB) Management (BSC) Marketing/Management (DCB, LRSC, NDSCS, NHSC, RC)	Hospitality & Tourism Management (NDSU)	
Recreation, Amusements & Attractions	Advertising & Marketing (DCB) Management (BSC) Marketing/Management (LRSC, NDSCS, NHSC, RC) Recreation Management (DCB) Theatre Arts transfer (BSC)	Apparel, Retail Merchandising and Design (NDSU) Sports Management (MaSU) Sports & Leisure Management (UM) Theatre Arts (DSU, MiSU, NDSU, UND)	Management (MiSU) Merchandising (NDSU)
Restaurant & Food/ Beverage Services	Chef Training and Management Technology (NDSCS) Culinary Arts/ Food Service (BJCC, NDSCS, UTTC) Restaurant Management (NDSCS)	Dietetics (NDSU, UND) Food Safety (NDSU) Hospitality & Tourism Management (NDSU)	Dietetics (NDSU) Food Safety (NDSU) Nutrition & Dietetics (UND)
Travel & Tourism	Advertising & Marketing (DCB) Management (BSC) Marketing/Management (LRSC, NDSCS, NHSC, RC) Reception Services (DCB)	Chinese Studies (UND) Culture Studies (UM) French (NDSU, UJ, UND) German (MiSU, UJ, UND) International/Intercultural Studies (TBC, UND) Interpreting & Sign Language Studies (MiSU) Marketing (MiSU, NDSU) Marketing/Management (RC, UM) Native American Studies (NHSC) Norwegian (UND) Spanish (DSU, MiSU, NDSU, UJ, UM, UND)	



















North Dakota Postsecondary Institutions Offering Hospitality & Tourism Related Programs

BSC	Bismarck State College	www.bismarckstate.edu	NDSU	ND State University	www.ndsu.edu
BJCC	Burdick Job Corps Center	http://quentinnburdick.jobcorps.gov	NHSC	Nueta Hidatsa Sahnish College	http://nhsc.edu
DCB	Dakota College at Bottineau	www.dakotacollege.edu	RC	Rasmussen College	www.rasmussen.edu
DSU	Dickinson State University	www.dickinsonstate.edu	TBC	Trinity Bible College	www.trinitybiblecollege.edu
LRSC	Lake Region State College	www.lrsc.edu	UTTC	United Tribes Technical College	www.uttcc.edu
MaSU	Mayville State University	www.mayvillestate.edu	UJ	University of Jamestown	www.uj.edu
MiSU	Minot State University	www.minotstateu.edu	UM	University of Mary	www.umary.edu
NDSCS	ND State College of Science	www.ndscs.edu	UND	University of North Dakota	www.und.edu

NOTES

HUMAN SERVICES

Career pathways related to families and human needs such as counseling and mental health services, family and community services, personal care, and consumer services.

		National	ND Outlook 2014-2024			ND Earnings Outlook	
Occupational Title/Description	Holland Code Related Occupations	Number Employed	Number Employed	Total Openings	Long-Term Growth Outlook	Annual Entry-Level Wages Annual Average Wages	Occupational Trait(s)
Postsecondary Programs – High School Diploma, Certificate, or Associate’s Degree							
Childcare Workers Attend to children at schools, businesses, private households, and childcare institutions. Perform a variety of tasks, such as dressing, feeding, bathing, and overseeing play.	Social Au Pair; Daycare Provider; Nanny	1,260,600	4,870	2,184	Avg to Near Avg Growth	\$17,300 \$22,170	
Hairdressers, Hairstylists, and Cosmetologists Provide beauty services, such as shampooing, cutting, coloring, and styling hair, and massaging and treating scalp. May apply makeup, dress wigs, perform hair removal, and provide nail and skin care services.	Artistic Beautician; Wig Stylist	597,200	2,031	692	Below Avg Growth	\$18,230 \$28,100	 
Massage Therapists Perform therapeutic massages of soft tissues and joints. May assist in the assessment of range of motion and muscle strength, or propose client therapy plans.	Social Deep Tissue Massage Therapist; Swedish Masseuse	168,800	379	90	Avg to Near Avg Growth	\$2,290 \$39,890	
Morticians, Undertakers, and Funeral Directors Perform various tasks to arrange funeral services, such as coordinating transportation of body to mortuary, interviewing family or other authorized person to arrange details, and providing transportation for mourners.	Social Certified Mortician; Funeral Arranger	31,100	70	19	Below Avg Growth	\$35,750 \$63,520	 
Personal Care Aides Assist the elderly, convalescents, or persons with disabilities with daily living activities. Duties performed at a place of residence may include keeping house (making beds, doing laundry, washing dishes) and preparing meals. May provide assistance at non-residential care facilities.	Social Blind Escort; Elderly Companion; Geriatric Personal Care Aide	1,768,400	4,665	1,838	High Growth	\$25,430 \$31,890	
Residential Advisors Coordinate activities in residential facilities in secondary and college dormitories, group homes, or similar establishments. May assist residents with problem solving or refer them to counseling resources.	Social Dormitory Counselor; House Parent; Residence Life Coordinator	103,700	920	428	Avg to Near Avg Growth	\$17,870 \$30,530	
Social and Human Service Assistants Assist clients in identifying and obtaining available benefits, social and community services. May assist social workers with developing, organizing, and conducting programs to prevent and resolve problems relevant to substance abuse, human relationships,	Conventional Case Work Aide; Family Service Assistant; Human Services Worker	386,600	1,328	551	High Growth	\$26,290 \$35,030	
Postsecondary Programs – Bachelor’s Degree or Higher							
Child, Family, and School Social Workers Provide assistance to improve the social and psychological functioning of children and their families. May assist parents, arrange adoptions, and find foster homes. In schools, they address concerns such as teenage pregnancy, misbehavior, and truancy.	Social Certified Social Worker; Child Abuse Worker; Foster Care worker	305,200	712	284	Avg to Near Avg Growth	\$38,960 \$52,630	  
Clergy Conduct religious worship and perform other spiritual functions associated with beliefs and practices of religious faith or denomination. Provide spiritual and moral guidance and assistance to members.	Social Imam; Priest; Rabbi	244,200	1,249	364	Below Avg Growth	\$28,970 \$49,720	 
Clinical, Counseling, and School Psychologists Diagnose and treat mental disorders; learning disabilities; and cognitive, behavioral, and emotional problems, using individual, child, family, and group therapies.	Investigative Child Psychologist; School Psychologist	155,300	313	145	High Growth	\$56,730 \$86,810	   
Directors, Religious Activities and Education Plan, direct, or coordinate programs designed to promote the religious education or activities of a denominational group. May provide counseling and guidance relative to marital, health, financial, and religious problems.	Enterprising Religious Education Director; Youth Ministry Director	131,900	296	100	Below Avg Growth	\$30,320 \$46,420	
Healthcare Social Workers Provide individuals, families, and groups with the psychosocial support needed to cope with chronic, acute, or terminal illnesses. Services include advising family care givers, providing patient education and counseling, and making referrals for other services.	Social Hospice Social Worker; Oncology Social Worker; Public Health Social Worker	160,100	362	153	Avg to Near Avg Growth	\$40,060 \$50,320	
Marriage and Family Therapists Diagnose and treat mental and emotional disorders, whether cognitive, affective, or behavioral, within the context of marriage and family systems. Apply psychotherapeutic and family systems theories and techniques in the delivery of services.	Social Child and Family Counselor; Marriage Counselor	33,700	177	79	High Growth	\$32,770 \$46,640	  



Energy Occupation



Bright Outlook



High Skill







High Wage



Military

HUMAN SERVICES

		National	ND Outlook 2014-2024			ND Earnings Outlook	
Occupational Title/Description	Holland Code Related Occupations	Number Employed	Number Employed	Total Openings	Long-Term Growth Outlook	Annual Entry-Level Wages Annual Average Wages	Occupational Trait(s)
Postsecondary Programs – Bachelor’s Degree or Higher							
Mental Health Counselors Work with individuals and groups to promote optimum mental and emotional health. Includes issues associated with addictions and substance abuse; family, parenting; stress management; self-esteem; and aging.	Social	134,500	84	37	High Growth	\$33,560	 
	Licensed Clinical Mental Health Counselor (LCMHC)					\$49,780	
Probation Officers and Correctional Treatment Specialists Assist in rehabilitation of law offenders in custody, on probation or parole. Make recommendations for actions involving the rehabilitation plan and treatment of offender, including education and employment stipulations.	Social	91,700	167	46	Below Avg Growth	\$43,940	 
	Juvenile Probation Officer; Parole Agent; Parole Officer					\$53,600	



Energy Occupation



Bright Outlook



High Skill



High Wage



Military

North Dakota Human Services Related Postsecondary Programs

Pathway	Certificate or Associate's Degree	Bachelor's Degree	Master's Degree or More
Consumer Services	Business Administration transfer (BSC, CCCC, DCB, NDSCS, NHSC, SBC, TBC, TMCC) Management (BSC, RC)	Business Administration (NDSU, UJ, SBC, TBC, UTTC, VCSU) Management (MiSU, NDSU, RC)	Business Administration (NDSU)
Counseling & Mental Health Services	Addiction Studies (NHSC, WSC) Psychology transfer (BSC, DCB, NDSCS, TMCC, WSC)	Addiction Studies (MiSU) Applied Psychology (MaSU) Psychology (DSU, MiSU, NDSU, UJ, UM, UND, VCSU)	Clinical Counseling (UJ) Counseling (NDSU, UM, UND) Counseling Psychology & Community Services (UND) Psychology (NDSU, UND)
Early Childhood Development & Services	Child Development (DCB, NHSC) Early Childhood (MaSU) Early Childhood Education transfer (BSC, CCCC, DCB, LRSC, NDSCS, NHSC, SBC, RC)	Early Childhood (MaSU) Early Childhood Education (MaSU, MiSU, RC, SBC, UM, UND) Human Development & Family Science (NDSU)	Early Childhood Education (UND) Human Development & Family Science (NDSU)
Family & Community Services	Biblical Studies (TBC) Caregiver Services (DCB) Community Health Worker (SBC) Human Services/Eligibility Worker (BSC, NHSC, RC, SBC) Human Services and Social Services (UTTC) Human Services transfer (DCB) Religion transfer (BSC, WSC) Social Work transfer (BSC, CCCC, DSU, NDSCS, TMCC, WSC)	Catholic Studies (UM) Human Development & Family Science (NDSU) Human Services (RC, VCSU) Pastoral/Youth/Children's Ministry (TBC, UM) Rehabilitation and Human Services (UND) Religious/Theology/Biblical Studies (UJ, UM, UND, TBC) Social Work (MiSU, UM, UND)	Global Theology (TBC) Human Development & Family Science (NDSU) Missionary Leadership (TBC) Public Health (NDSU, UND) Rural Ministries (TBC) Social Work (UND)
Personal Care Services	Fitness Trainer Technician (LRSC) Barbering and Cosmetology (MBC) Cosmetology (HAHD, JSHDF, JSHDGF, JSHDW, JZT, THA, TSPA) Esthetician/Skin Care (JSHDGF, JSHDW, THA, TSPA) Massage Therapy (JSHDGF, JSHDW, TSPA, WSC) Nail Technology (JSHDW, JZT, THA, TSPA)	Athletic/Fitness Training (MiSU, UM, UND) Fitness and Wellness (MaSU) Exercise Science (DSU, NDSU, UM) Sport Management (NDSU)	Advanced Athletic Training (NDSU) Clinical Exercise Physiology (UM)

North Dakota Postsecondary Institutions Offering Human Services Related Programs

BSC Bismarck State College	www.bismarckstate.edu	NDSU ND State University	www.ndsu.edu
CCCC Cankdeska Cikana Community College	www.littlehoop.edu	NHSC Nueta Hidatsa Sahnish College	http://nhsc.edu
DCB Dakota College at Bottineau	www.dakotacollege.edu	RC Rasmussen College	www.rasmussen.edu
DSU Dickinson State University	www.dickinsonstate.edu	SBC Sitting Bull College	www.sittingbull.edu
HAHD Headquarters Academy of Hair Design	http://hqacademyofhair.com	THA The Hair Academy	www.thehairacademynd.com
JSHDF/GF/W Josef's School of Hair Design - Fargo/Grand Forks/ West Campus	josefsschoolofhairdesign.com	TSPA The Salon Professional Academy	www.tspafargo.com
JZT JZ Trend Academy Paul Mitchell Partner School	www.jztrendacademy.edu	TBC Trinity Bible College	www.trinitybiblecollege.edu
LRSC Lake Region State College	www.lrsc.edu	TMCC Turtle Mountain Community College	www.tm.edu
MaSU Mayville State University	www.mayvillestate.edu	UTTC United Tribes Technical College	www.uttcc.edu
MiSU Minot State University	www.minotstateu.edu	UJ University of Jamestown	www.uj.edu
MBC Moler Barber College	http://molerbarberfargo.com/	UM University of Mary	www.umary.edu
NDSCS ND State College of Science	www.ndscs.edu	UND University of North Dakota	www.und.edu
		VCSU Valley City State University	www.vcsu.edu
		WSC Williston State College	www.willistonstate.edu

ANDREA GOTTBREHT BIRST Rolette High School

Q: What were the next steps for you after high school graduation?

A: After years of thinking about a Physical Therapy degree, I changed my plan to Cosmetology during senior year. It was a big change, yet the work seemed fun with an artistic element that appealed to me. I graduated from RD Hairstyling College and started to work at salons. After a few years, a co-worker and I decided to purchase Glance, an established Bismarck salon. I am now the sole proprietor of Glance Spa and Salon, offering hair styling and color, nails, spa, makeup and massage services. A recent addition is a laser hair therapy option.

Q: Tell us what a typical day and week looks like for you?

A: My time is divided between working on the business and working on behalf of my staff. I do not work directly with clients as much as I used to. The business requires general management, including the financial oversight. The work for my staff involves leadership development, fostering a sense of community, and individual growth as a team member. Every day requires that I be a problem-solver.

Q: Every business owner needs to have initiative and be willing to accept a degree of risk. What are some of the challenges you have?

A: There can be a lot of turnover in staff, especially when they are trying to grow in the profession and advance financially. Accountability to the business and to customers is an area that is stressed often and in many ways. Being part of a service-based business such as Glance has expectations that may seem inconsequential to some, such as washing and folding towels, honoring appointments, being on-time for work, etc. Following through on those types of tasks are essential to a business where a customer's satisfaction is the key to success.

There are times when I don't feel fully prepared, or I'm uncertain about how to handle an issue. No matter what the concern is, I am willing to face each day as an opportunity to learn and grow.

Q: The business model at Glance is unique. Tell us how it varies from most salons.

A: In a commission-based business, stylist's earnings are impacted by high and low periods of the business and economy. Glance is now using a team-based model for the business. There is an hourly wage paid throughout the program, including the training program.

Staff members develop broad-based skills that benefit the entire salon. There is a support system in place with frequent coaching and a strong sense of community.

Q: In your opinion, what are the essential building blocks of being ready for life after high school?

A: Education and training beyond high school is necessary. Every student needs to decide where to start, and understand that the best career choice is individually based on their commitment to education and their drive to succeed.



Cluster: *Human Services* Pathway: *Personal Care Services*

Is Entrepreneurship for You?

Entrepreneurs own and operate their own businesses. A common concern among prospective entrepreneurs is whether they have the right personalities, characteristics or skills necessary to own and run a small business.

The questions below may help you evaluate whether starting a business fits well with your personality and skills. It cannot predict business success, but can be used as a starting point in exploring whether entrepreneurship is an option for you.

Yes No

- | | | |
|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | Are you able to get a point across in a conversation? |
| <input type="checkbox"/> | <input type="checkbox"/> | Are you willing to put off short-term rewards for greater potential down the road? |
| <input type="checkbox"/> | <input type="checkbox"/> | Have you taken training in public speaking, debating, or sales techniques? |
| <input type="checkbox"/> | <input type="checkbox"/> | Are you comfortable approaching friends and colleagues about services and products beneficial to their present and future needs? |
| <input type="checkbox"/> | <input type="checkbox"/> | Do you enjoy the challenge of introducing yourself to new contacts who may also have need of your service or product? |
| <input type="checkbox"/> | <input type="checkbox"/> | Have you invested in your own future by developing a modest nest egg to finance a career change? |
| <input type="checkbox"/> | <input type="checkbox"/> | Are you the first person to introduce yourself in a group of new people? |
| <input type="checkbox"/> | <input type="checkbox"/> | Would you describe yourself as having an enthusiastic personality? |
| <input type="checkbox"/> | <input type="checkbox"/> | Do you feel comfortable asking for the names of friends and colleagues to contact? |
| <input type="checkbox"/> | <input type="checkbox"/> | Are you comfortable calling strangers for appointments? |
| <input type="checkbox"/> | <input type="checkbox"/> | Do most people consider you outgoing and self-confident? |
| <input type="checkbox"/> | <input type="checkbox"/> | Are you comfortable with a career in which income may vary from week to week or month to month? (for example - no steady paycheck) |
| <input type="checkbox"/> | <input type="checkbox"/> | Have you developed a financial plan for retirement? |
| <input type="checkbox"/> | <input type="checkbox"/> | Are you planning for early retirement? |
| <input type="checkbox"/> | <input type="checkbox"/> | Do you prefer not having goals and objectives set for you by a supervisor? |
| <input type="checkbox"/> | <input type="checkbox"/> | Are you plugged in to networking groups and civic organizations in your community? |
| <input type="checkbox"/> | <input type="checkbox"/> | Do you consider sales a part of your current position? |
| <input type="checkbox"/> | <input type="checkbox"/> | Are you uncomfortable working a traditional 8-5 schedule? |
| <input type="checkbox"/> | <input type="checkbox"/> | Do you consider yourself assertive? |
| <input type="checkbox"/> | <input type="checkbox"/> | Do you generally step forward and ask for what you want? |


YOUR ENTREPRENEURIAL QUOTIENT

Give yourself one point for each "yes" answer.

If you scored between 14 and 20, you probably have the necessary qualities to create your own business opportunity and competently handle the challenge involved.

If you scored between 10 and 13, you may have the makings of an entrepreneur but may need more experience before taking the plunge.

If you scored below 10, at this point in your life you are probably better suited to traditional employment.



Some additional factors to consider for self-employment or entrepreneurship:

BONUSES

- Create my own job
- Follow my interests
- Every day is different
- Control over my schedule
- Opportunity to be creative

CHALLENGES

- Unpredictable income
- Isolation if I work alone
- Recordkeeping and paperwork
- Long hours
- No benefits such as health, dental, and disability

WHERE CAN YOU GET INFORMATION & ASSISTANCE ON ENTREPRENEURSHIP?

Center for Technology & Business
<http://trainingnd.com/>












Innovate ND
<http://innovatend.com>

ND Department of Commerce,
Division of Economic Development
& Finance
<http://business.nd.gov>

ND Department of Veterans Affairs
<http://www.nd.gov/veterans/benefits/entrepreneurship>

INFORMATION TECHNOLOGY

Careers related to the design, development, support and management of hardware, software, multimedia and systems integration services.

		National	ND Outlook 2014-2024			ND Earnings Outlook	
Occupational Title/Description	Holland Code Related Occupations	Number Employed	Number Employed	Total Openings	Long-Term Growth Outlook	Annual Entry-Level Wages Annual Average Wages	Occupational Trait(s)
Postsecondary Programs – High School Diploma, Certificate, or Associate’s Degree							
Computer Network Support Specialists 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.	Realistic	181,000	453	150	High Growth	\$40,700	  
	Network Diagnostic Support Technician; Network Support Technician					\$55,500	
Computer Operators Monitor and control electronic computer and electronic data processing equipment to process business, scientific, engineering, and other data according to operating instructions. May enter commands at a computer terminal and set controls on computer and peripheral devices.	Conventional	61,100	195	15	Zero to Declining Growth	\$32,490	
	Computer Peripheral Equipment Operator; Console Operator					\$42,150	
Computer User Support Specialists Provide technical assistance to computer users. May provide assistance concerning the use of computer hardware and software, including printing, installation, word processing, electronic mail, and operating systems.	Realistic	585,900	1,396	439	Avg to Near Avg Growth	\$32,180	   
	End-User Support Specialist; Help Desk Technician					\$52,750	
Web Developers Design, create, and modify Web sites. Analyze user needs to implement content, graphics, performance, and capacity. Convert written, graphic, audio, and video components to compatible Web formats by using software.	Conventional	148,500	273	132	High Growth	\$41,020	  
	Internet Developer; Intranet Developer; Web Designer					\$60,100	

CTE PRESIDENTIAL SCHOLAR

EVAN WELSH Grand Forks Central High School

Evan Welsh, a recent graduate of Grand Forks Central High School, has been named a 2017 Presidential Scholar in Career and Technical Education. The U.S. Presidential Scholars Program recognizes 20 outstanding Career and Technical Education students nationwide.

Evan became involved with computers and information technology at a young age. At that time, he wanted to customize code for the game Minecraft. At first his efforts weren't very effective. Through his research, however, Evan's skills began to grow and he met a software developer who helped him understand that "computer programming is like a spoken language." Both the vocabulary and the underlying structure are important. With newfound understanding, developing software for Minecraft became a frequent and successful hobby.

While in high school, Evan enrolled

in computer programming classes and later began helping teach the material he had learned. He recently taught an advanced introductory course to younger students using curriculum that he developed through online resources such as MIT's OpenCourseWare. He spent time each day drafting lesson plans and correcting coursework. He encourages his students to find a deeper knowledge of programming through creativity and experimentation.

In addition to his academic endeavors, Evan started a tech-support business two years ago. He has been able to help clients with mundane computer tasks that to them seem insurmountable. His clients previously struggled with finding tech support that they could trust and that could be explained to them in an understandable way. Evan believes that computers should be designed "to work with us, not actively work against us."

Evan enjoys working with people,
















Photo by Ben's Photography, Grand Forks, ND

graphic design, linguistics, and computer programming to innovate and create better solutions for the future. In pursuit of this passion, he will attend Cornell's College of Arts and Sciences to double major in Computer Science and Linguistics. He hopes to eventually pursue a career in natural language processing.



INFORMATION TECHNOLOGY

		National	ND Outlook 2014-2024			ND Earnings Outlook	
Occupational Title/Description	Holland Code Related Occupations	Number Employed	Number Employed	Total Openings	Long-Term Growth Outlook	Annual Entry-Level Wages Annual Average Wages	Occupational Trait(s)
Postsecondary Programs – Bachelor’s Degree or Higher							
Computer Network Architects 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.	Investigative Computer Network Engineer; Network Designer	146,200	153	56	High Growth	\$61,230 \$87,400	 
Computer Systems Analysts 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.	Investigative Applications Analyst; Data Processing Systems Analyst; Systems Architect	567,800	537	205	High Growth	\$51,780 \$78,300	 
Information Security Analysts 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.	Conventional Computer Security Specialist; Internet Security Specialist	82,900	127	50	High Growth	\$55,300 \$74,780	  
Network and Computer Systems Administrators Computer networks are critical parts of almost every organization. Network and computer systems administrators are responsible for the day-to-day operation of these networks.	Investigative Network Security Administrator; Wide Area Network Administrator	382,600	523	129	Avg to Near Avg Growth	\$49,820 \$67,560	 
Operations Research Analysts Formulate and apply mathematical modeling to develop and interpret information that assists management with decision making, policy formulation, or other managerial functions. May collect and analyze data and develop decision support software, service, or products.	Investigative Operations Analyst; Procedure Analyst; Process Analyst	91,300	92	53	High Growth	\$45,910 \$69,090	
Software Developers, Applications Some develop the applications that allow people to do specific tasks on a computer or other device. Others develop the underlying systems that run the devices or control networks.	Investigative Computer Applications Engineer	718,400	1,273	551	High Growth	\$59,440 \$79,820	  



Energy Occupation



Bright Outlook



High Skill



High Wage



Military

North Dakota Hospitality And Tourism Related Postsecondary Programs

Pathway	Associate's Degree or Less	Bachelor's Degree	Master's Degree or More
Information Support & Services	Computer Applications (CCCC) Computer Support Specialist (TMCC) Computer Technology (DCB, UTTC) Computerized Office Management (DCB) Geographic Information Systems Technician (BSC) Information Systems Administrator (NDSCS) Information Processing Specialist (BSC) Information Management (NHSC, RC) Information Technology (LRSC, NDSCS, SBC, WSC) IT Forensics & Security (NDSCS) Management Information Systems transfer (NDSCS)	Applied Business Information Technology (MiSU) Computer Technology Management (DSU) Information Security (RC) Information Technology Management (UM) Technology Education (DSU, VCSU)	Information Systems (MiSU) Library/Information Technology (VCSU)
Network Systems	Information Management (NHSC, RC) Information and Communications Technology (LRSC, NDSCS, SBC)	Computer Information Systems (UM, VCSU) Information Systems (UND) Management Information Systems (NDSU)	Computer Science (NDSU, UND) Electrical and Computer Engineering (NDSU)
Programming & Software Development	Computer Science transfer (BSC, NDSCS) Mobile Application Developer (NDSCS) Software Application Development (RC)	Computer Engineering (NDSU) Computer Science (DSU, MiSU, NDSU, RC, UJ, UM, UND) Electrical Engineering (NDSU) Software Engineering (VCSU)	Electrical and Computer Engineering (NDSU) Software Engineering (NDSU)
Web & Digital Communications	Computer Technology/Webmaster and Web Design (DCB) Web Design (DCB, NDSCS) Web Developer/Webmaster (DCB, NDSCS) Web Page Development and Design (BSC) Web Programming (RC)	New Media and Web Design (NDSU)	


North Dakota Postsecondary Institutions Offering Information Technology Related Programs

BSC	Bismarck State College	www.bismarckstate.edu	NHSC	Nueta Hidatsa Sahnish College	http://nhsc.edu
CCCC	Cankdeska Cikana Community College	www.littlehoop.edu	RC	Rasmussen College	www.rasmussen.edu
DCB	Dakota College at Bottineau	www.dakotacollege.edu	SBC	Sitting Bull College	www.sittingbull.edu
DSU	Dickinson State University	www.dickinsonstate.edu	TMCC	Turtle Mountain Community College	www.tm.edu
LRSC	Lake Region State College	www.lrsc.edu	UJ	University of Jamestown	www.uj.edu
MaSU	Mayville State University	www.mayvillestate.edu	UM	University of Mary	www.umary.edu
MiSU	Minot State University	www.minotstate.edu	UND	University of North Dakota	www.und.edu
NDSCS	ND State College of Science	www.ndscs.edu	VCSU	Valley City State University	www.vcsu.edu
NDSU	ND State University	www.ndsu.edu	WSC	Williston State College	www.willistonstate.edu

LAW, PUBLIC SAFETY, CORRECTIONS & SECURITY

Planning, managing, and providing legal, public safety, protective services and homeland security, including professional and technical support services.

		National	ND Outlook 2014-2024			ND Earnings Outlook	
Occupational Title/Description	Holland Code Related Occupations	Number Employed	Number Employed	Total Openings	Long-Term Growth Outlook	Annual Entry-Level Wages Annual Average Wages	Occupational Trait(s)
Postsecondary Programs – High School Diploma, Certificate, or Associate’s Degree							
Correctional Officers and Jailers Guard inmates in penal or rehabilitative institutions in accordance with established regulations and procedures. May guard prisoners in transit between jail, courtroom, prison, or other point.	Realistic Certified Detention Deputy; Juvenile Corrections Officer; Prison Guard	333,012	954	364	Avg to Near Avg Growth	\$34,280 \$40,900	
Detectives and Criminal Investigators Conduct investigations related to suspected violations of Federal, State, or local laws to prevent or solve crimes.	Enterprising Homicide Detective; Narcotics Investigator	116,700	322	96	Below Avg Growth	\$63,260 \$83,490	
Firefighters Control and extinguish 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.	Realistic Engine Pump Operator; Forest Firefighter; Smoke Jumper	327,300	303	122	Avg to Near Avg Growth	\$32,880 \$45,330	 
Paralegals and Legal Assistants Assist lawyers by investigating facts, preparing legal documents, or researching legal precedent. Conduct research to support a legal proceeding, to formulate a defense, or to initiate legal action.	Conventional Legal Aide	279,500	443	122	Below Avg Growth	\$31,380 \$45,350	
Police and Sheriff’s Patrol Officers Maintain order and protect life and property by enforcing local, tribal, State, or Federal laws and ordinances. Perform the following duties: patrol a specific area; direct traffic; investigate accidents; apprehend suspects, or serve legal processes of courts.	Realistic Border Patrol Officer; Motorcycle Police; Park Police; State Trooper	680,000	1,314	582	Avg to Near Avg Growth	\$40,540 \$53,800	 
Police, Fire, and Ambulance Dispatchers Operate radio, telephone, or computer equipment at emergency response centers. Receive reports of crimes, disturbances, fires, and medical or police emergencies. Relay information to law enforcement and emergency response personnel.	Conventional Emergency Operator; 911 Operator; Police Radio Dispatcher	102,000	113	28	Zero to Declining Growth	\$30,670 \$41,050	
Title Examiners, Abstractors, and Searchers Search real estate records, examine titles, and summarize legal or insurance documents for a variety of purposes. May compile lists of mortgages, contracts, and other instruments pertaining to titles by searching records.	Conventional Escrow Officer; Lien Searcher; Title Officer	71,100	303	67	Zero to Declining Growth	\$33,400 \$54,950	
Transportation Security Screeners Conduct screening of passengers, baggage, or cargo to ensure compliance with Transportation Security Administration (TSA) regulations. May operate basic security equipment such as X-ray machines and hand wands at screening checkpoints.	Realistic Airport Baggage Screener, Airport Security Screener	46,600	155	24	Below Avg Growth	\$31,470 \$36,750	
Postsecondary Programs – Bachelor’s Degree or Higher							
Forensic Science Technicians Collect, identify, classify, and analyze physical evidence related to criminal investigations. Perform tests on weapons or substances, such as fiber, hair, and tissue to determine significance to investigation. May testify as expert witnesses on evidence or crime laboratory techniques.	Investigative Ballistics Expert; Crime Scene Technician; Trace Evidence Technician	14,400	19	13	High Growth	\$24,840 \$40,920	
Judicial Law Clerks Assist judges in court or by conducting research or preparing legal documents.	Conventional Judicial Clerk	12,400	40	9	Zero to Declining Growth	\$54,560 \$69,450	 
Lawyers Represent clients in criminal and civil litigation and other legal proceedings, draw up legal documents, or manage or advise clients on legal transactions. May specialize in a single area or may practice broadly in many areas of law.	Enterprising Attorney; Corporate Counsel; Public Defender	778,700	1,736	306	Below Avg Growth	\$58,860 \$102,660	  
Probation Officers and Correctional Treatment Specialists Assist in rehabilitation of law offenders in custody, on probation or parole. Make recommendations for actions involving the rehabilitation plan and treatment of offender, including education and employment stipulations.	Social Juvenile Probation Officer; Parole Agent; Parole Officer	91,700	167	46	Below Avg Growth	\$43,940 \$53,600	 
Social and Community Service Managers 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.	Enterprising Child Welfare Director; Family Services Director; Youth Program Director	138,500	618	260	Avg to Near Avg Growth	\$50,000 \$66,860	  

 **Energy Occupation**

 **Bright Outlook**

 **High Skill**

 **High Wage**

 **Military**

LAW, PUBLIC SAFETY, CORRECTIONS & SECURITY

North Dakota Law, Public Safety, Corrections & Security Related Postsecondary Programs

Pathway	Certificate or Associate's Degree	Bachelor's Degree	Master's Degree or More
Correction Services	Criminal Justice Transfer (BSC, NDSCS, RC, SBC, TMCC, UTTC, WSC) Criminal Justice Technical (BSC)	Criminal Justice (DSU, MiSU, NDSU, RC, UTTC, UJ, UM, UND)	Criminal Justice (NDSU)
Emergency & Fire Management Services	Advanced Emergency Medical Technician-AEMT (NDSCS) Community Paramedic (NDSCS) Emergency Management Transfer (NDSCS) Paramedic/EMT Technology (DCB, NDSCS)	Emergency Management (NDSU)	Emergency Management (NDSU)
Law Enforcement Services	Criminal Justice Transfer (BSC, NDSCS, RC, SBC, TMCC, UTTC, WSC) Criminal Justice Technical (BSC) Law Enforcement (LRSC) Peace Officer (LRSC)	Criminal Justice (DSU, MiSU, NDSU, RC, UTTC, UJ, UM, UND) Forensic Science (UND)	Criminal Justice (NDSU)
Legal Services	Law Transfer (NDSCS, WSC) Legal Administrative Assistant (BSC) Paralegal/Lay Advocate (RC, SBC) Political Science transfer (BSC, TMCC)	Political Science (DSU, NDSU, UND)	Law (UND)
Security & Protective Services	Military Science transfer (BSC)	Military Science (NDSU, UND)	

North Dakota Postsecondary Institutions Offering Law, Public Safety, Corrections & Security Related Programs

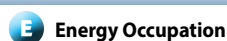
BSC	Bismarck State College	www.bismarckstate.edu	SBC	Sitting Bull College	www.sittingbull.edu
DCB	Dakota College at Bottineau	www.dakotacollege.edu	TMCC	Turtle Mountain Community College	www.tm.edu
DSU	Dickinson State University	www.dickinsonstate.edu	UTTC	United Tribes Technical College	www.uttcc.edu
LRSC	Lake Region State College	www.lrsc.edu	UM	University of Mary	www.umary.edu
MiSU	Minot State University	www.minotstateu.edu	UND	University of North Dakota	www.und.edu
NDSCS	ND State College of Science	www.ndscs.edu	VCSU	Valley City State University	www.vcsu.edu
NDSU	ND State University	www.ndsu.edu	WSC	Williston State College	www.willistonstate.edu
RC	Rasmussen College	www.rasmussen.edu			

NOTES






MANUFACTURING


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.

		National	ND Outlook 2014-2024			ND Earnings Outlook	
Occupational Title/Description	Holland Code Related Occupations	Number Employed	Number Employed	Total Openings	Long-Term Growth Outlook	Annual Entry-Level Wages Annual Average Wages	Occupational Trait(s)
Postsecondary Programs – High School Diploma, Certificate, or Associate’s Degree							
Cabinetmakers and Bench Carpenters Cut, shape, and assemble wooden articles or set up and operate a variety of woodworking machines, such as power saws, jointers, and mortisers to surface, cut, or shape lumber or to fabricate parts for wood products.	Realistic Cabinet Builder; Marquetry Worker; Wood Furniture Assembler	98,100	407	58	Below Avg Growth	\$30,410 \$38,650	
Computer-Controlled Machine Tool Operators, Metal and Plastic Operate computer-controlled machines or robots to perform one or more machine functions on metal or plastic work pieces.	Realistic Jig Boring Machine Operator for Metal; Welding Robot Operator	148,800	121	71	High Growth	\$37,240 \$48,030	☀
Electrical and Electronic Equipment Assemblers Assemble or modify electrical or electronic equipment, such as computers, test equipment telemetering systems, electric motors, and batteries.	Realistic Circuit Board Assembler; Electric Motor Controls Assembler	207,200	543	98	Below Avg Growth	\$23,450 \$32,980	
Industrial Machinery Mechanics Repair, install, adjust, or maintain industrial production and processing machinery or refinery and pipeline distribution systems.	Realistic Foundry Equipment Mechanic; Hydroelectric Machinery Mechanic	332,200	1,527	563	Avg to Near Avg Growth	\$39,980 \$61,580	☀ 💰
Inspectors, Testers, Sorters, Samplers, and Weighers Inspect, test, sort, sample, or weigh non-agricultural raw materials or processed, machined, fabricated, or assembled parts or products for defects, wear, and deviations from specifications.	Conventional Parts Quality Inspector; Petroleum Sampler	496,600	1,720	478	Below Avg Growth	\$30,400 \$54,860	💰
Machinists Set up and operate a variety of machine tools to produce precision parts and instruments. Includes precision instrument makers who fabricate, modify, or repair mechanical instruments. May also fabricate and modify parts to make or repair machine tools or maintain industrial machines.	Realistic Automotive Machinist; Gear Machinist; Production Machinist	399,700	726	309	Avg to Near Avg Growth	\$32,990 \$44,560	🇺🇸
Mechanical Engineering Technicians Apply theory and principles of mechanical engineering to modify, develop, test, or calibrate machinery and equipment under direction of engineering staff or physical scientists.	Realistic Gyroscope Engineering Technician; Heat Transfer Technician	48,400	168	47	Below Avg Growth	\$42,110 \$58,860	⚙️ 💰
Multiple Machine Tool Setters, Operators and Tenders, Metal and Plastic Set up, operate, or tend more than one type of cutting or forming machine tool or robot.	Realistic Multi-Operation Forming Machine Setter	99,800	104	25	Below Avg Growth	\$26,770 \$38,260	
Power Plant Operators Control, operate, or maintain machinery to generate electric power. Includes auxiliary equipment operators.	Realistic Hydroelectric Plant Operator	41,100	244	103	Below Avg Growth	\$56,070 \$79,910	⚡ ☀️ 💰
Production, Planning, and Expediting Clerks Coordinate and expedite the flow of work and materials within or between departments of an establishment according to production schedule.	Conventional Expeditor; Material Control Clerk; Production Scheduler	304,600	1,051	365	Below Avg Growth	\$31,850 \$41,950	
Sawing Machine Setters, Operators, and Tenders, Wood Set up, operate, or tend wood sawing machines. May operate Computer Numerical Control equipment.	Realistic Buzzsaw Operator; Trim Saw Operator	50,000	44	16	Below Avg Growth	\$26,930 \$32,470	
Structural Metal Fabricators and Fitters Fabricate, position, align, and fit parts of structural metal products.	Realistic Mill Beam Fitter; Protector Plate Attacher	79,200	98	16	Zero to Declining Growth	\$31,650 \$40,350	
Supervisors of Production and Operating Workers Directly supervise and coordinate the activities of production and operating workers, such as inspectors, precision workers, machine setters and operators, assemblers, fabricators, and plant and system operators.	Enterprising Assembly Line Supervisor; Machinist Supervisor	606,900	2,037	406	Below Avg Growth	\$39,470 \$63,860	💰
Tool and Die Makers Analyze specifications, lay out metal stock, set up and operate machine tools, and fit and assemble parts to make and repair dies, cutting tools, jigs, fixtures, gauges, and machinists’ hand tools.	Realistic Jig Bore Tool Maker; Metal Die Finisher; Metal Gauge Maker	77,800	57	3	Zero to Declining Growth	\$37,680 \$49,020	



MANUFACTURING

		National	ND Outlook 2014-2024			ND Earnings Outlook	
Occupational Title/Description	Holland Code Related Occupations	Number Employed	Number Employed	Total Openings	Long-Term Growth Outlook	Annual Entry-Level Wages Annual Average Wages	Occupational Trait(s)
Postsecondary Programs – High School Diploma, Certificate, or Associate’s Degree							
Welders, Cutters, Solderers, and Brazers Use hand-welding, flame-cutting, hand soldering, or brazing equipment to weld or join metal components or to fill holes, indentations, or seams of fabricated metal products.	Realistic Arc Welder; Cutting Torch Operator	397,900	2,791	801	Zero to Declining Growth	\$34,730 \$52,210	 
Postsecondary Programs – Bachelor’s Degree or Higher							
Industrial Production Managers Plan, direct, or coordinate the work activities and resources necessary for manufacturing products in accordance with cost, quality, and quantity specifications.	Enterprising Manufacturing Director; Production Control Manager	173,400	343	128	Below Avg Growth	\$57,660 \$96,170	 
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products Sell goods for wholesalers or manufacturers where technical or scientific knowledge is required in such areas as biology, engineering, chemistry, and electronics.	Enterprising Pharmaceutical Sales Representative; Surgical Instruments Sales Representative	347,800	849	175	Zero to Declining Growth	\$43,280 \$74,860	

 **Energy Occupation**

 **Bright Outlook**

 **High Skill**

 **High Wage**

 **Military**

North Dakota Manufacturing Related Postsecondary Programs

Pathway	Associate's Degree or Less	Bachelor's Degree	Master's Degree or More
Health, Safety & Environmental Assurance	Emergency Management transfer (NDSCS) Environmental Public Health (TMCC) Environmental Technology/Science transfer (NHSC, SBC, TMCC, UTTC, WSC)	Emergency Management (NDSU) Environmental Design (NDSU) Environmental Science (DSU, NHSC, SBC) Health Communication (NDSU)	Emergency Management (NDSU) Environmental and Conservation Sciences (NDSU, SBC) Environmental Engineering (NDSU, UND)
Logistics & Inventory Control	Information Technology (DCB) Information Processing Specialist (BSC) Management Information Systems (NDSCS)	Business Process Integration Management (VCSU) Computer Technology Management (DSU) Energy Economics and Finance (MiSU) Management Information Systems (MiSU, NDSU) Operations and Supply Chain Management (UND)	Transportation and Logistics (NDSU)
Maintenance, Installation & Repair	Electrical Lineworker (BSC) Electrical Power Technology (BSC) Electrical Transmission Systems Technology (BSC) Electronics Technology (BSC) Electronics and Telecommunications Technology (BSC) Mechanical Maintenance Technology (BSC) Welding Technology (BSC, BJCC, LW, NDSCS, NHSC, SBC, TMCC, UTTC, WSC) Wind Energy Technician (LRSC)	Industrial Technology (UND)	
Manufacturing Process Production Development	Engineering Technology (BSC) Power Plant Technology (BSC) Process Plant Technology (BSC, TMCC) Energy Services & Renewable Technician (BSC)	Engineering Science (UJ, UM) Industrial Engineering and Management (NDSU) Manufacturing Engineering (NDSU)	Industrial Engineering and Management (NDSU) Manufacturing Engineering (NDSU)
Production	Heating, Ventilation, and Air Conditioning (BSC, CCCC, NDSCS, TMCC) Precision Machining Technology (NDSCS) Production Operations/Refinery Training (NHSC) Robotics, Automation and Mechatronics Technology (NDSCS) Welding Technology (BSC, BJCC, LW, NDSCS, NHSC, SBC, TMCC, UTTC, WSC)	Energy Management (BSC)	Materials and Nanotechnology (NDSU)
Quality Assurance	Instrumentation and Control Technology (BSC)	Industrial Engineering and Management (NDSU)	Industrial Engineering and Management (NDSU)

North Dakota Postsecondary Institutions Offering Manufacturing Related Programs

BSC Bismarck State College	www.bismarckstate.edu	NDSU ND State University	www.ndsu.edu
BJCC Burdick Job Corps Center	http://quentinnburdick.jobcorps.gov	NHSC Nueta Hidatsa Sahnish College	http://nhsc.edu
CCCC Cankdeska Cikana Community College	www.littlehoop.edu	SBC Sitting Bull College	www.sittingbull.edu
DCB Dakota College at Bottineau	www.dakotacollege.edu	TMCC Turtle Mountain Community College	www.tm.edu
DSU Dickinson State University	www.dickinsonstate.edu	UTTC United Tribes Technical College	www.uttc.edu
LRSC Lake Region State College	www.lrsc.edu	UM University of Mary	www.umary.edu
LWT Lynnes Welding Training – Bismarck & Fargo	http://learntoweld.com	UND University of North Dakota	www.und.edu
MiSU Minot State University	www.minotstateu.edu	VCSU Valley City State University	www.vcsu.edu
NDSCS ND State College of Science	www.ndscs.edu	WSC Williston State College	www.willistonstate.edu

MARKETING

Planning, managing, and performing marketing activities to reach organizational objectives.

		National	ND Outlook 2014-2024			ND Earnings Outlook	
Occupational Title/Description	Holland Code Related Occupations	Number Employed	Number Employed	Total Openings	Long-Term Growth Outlook	Annual Entry-Level Wages Annual Average Wages	Occupational Trait(s)
Postsecondary Programs – High School Diploma, Certificate, or Associate's Degree							
Cashiers Receive and disburse money in establishments other than financial institutions. May use electronic scanners, cash registers, or related equipment. May process credit or debit card transactions and validate checks.	Conventional Cash Register Operator; Toll Collector	3,424,200	11,307	4,982	Below Avg Growth	\$18,470 \$23,780	☀️
Merchandise Displayers and Window Trimmers Plan and erect commercial displays, such as those in windows and interiors of retail stores and at trade exhibitions.	Artistic Display Artist; Window Decorator	120,800	301	74	Below Avg Growth	\$24,030 \$33,910	
Property, Real Estate, and Community Association Managers Plan, direct, or coordinate the selling, buying, leasing, or governance activities of commercial, industrial, or residential real estate properties. Includes managers of homeowner and condominium associations, rented or leased housing units, buildings, or land.	Enterprising Apartment Manager; Building Rental Manager; Leasing Property Manager	313,800	548	187	Avg to Near Avg Growth	\$29,670 \$60,750	💰
Real Estate Agents Perform duties, such as study property listings, interview prospective clients, accompany clients to property site, discuss conditions of sale, and draw up real estate contracts.	Enterprising Apartment Rental Agent	337,400	931	135	Below Avg Growth	\$28,880 \$53,200	💰
Retail Salespersons Sell merchandise, such as furniture, motor vehicles, appliances, or apparel to consumers.	Enterprising Car Salesperson; Apparel Salesperson	4,624,900	14,163	6,726	Avg to Near Avg Growth	\$19,810 \$32,230	☀️
Supervisors of Retail Sales Workers Supervise and coordinate activities of retail sales workers in an establishment or department. Duties include management functions, such as purchasing, budgeting, accounting, and personnel work.	Enterprising Cashier Supervisor; Delicatessen Department Manager	1,537,800	4,662	1,382	Below Avg Growth	\$29,690 \$46,610	☀️
Wholesale and Retail Buyers, Except Farm Products Buy merchandise or commodities for resale to consumers at the wholesale or retail level. Analyze buying trends, sales records, price, and quality of merchandise.	Enterprising Gold Buyer; Merchandise Buyer	129,500	389	161	Below Avg Growth	\$34,840 \$50,700	💰
Postsecondary Programs – Bachelor's Degree or Higher							
Advertising and Promotions Managers Plan, direct, or coordinate advertising policies and programs, such as posters, contests, coupons, or giveaways, to create extra interest in the purchase of a product or service.	Enterprising Advertising Director; Advertising Executive; Promotions Director	31,000	79	29	Below Avg Growth	\$50,360 \$81,390	🧠💰🇺🇸
Appraisers and Assessors of Real Estate Appraise real property and estimate its fair value. May assess taxes in accordance with prescribed schedules.	Enterprising Land Appraiser; Property Appraiser	85,800	118	33	Avg to Near Avg Growth	\$28,830 \$49,740	🧠
Market Research Analysts and Marketing Specialists Research market conditions or gather information to determine potential sales of a product or service. May gather information on competitors, prices, sales, and methods of marketing and distribution.	Investigative Research Specialist; Marketing Consultant; Marketing Forecaster	495,500	777	286	High Growth	\$36,000 \$53,810	☀️🧠💰
Marketing Managers Plan, direct, or coordinate marketing policies and programs. Develop pricing strategies with the goal of maximizing the firm's profits or share of the market while ensuring the firm's customers are satisfied.	Enterprising Internet Marketing Manager; Marketing Administrator; Marketing Director	194,300	334	133	Avg to Near Avg Growth	\$60,180 \$109,200	🧠💰
Sales Engineers Sell business goods or services, the selling of which requires a technical background equivalent to a baccalaureate degree in engineering.	Enterprising Aerospace Products Sales Engineer; Missile Navigation Systems Sales Engineer	69,900	69	37	High Growth	\$62,930 \$101,350	💰
Sales Managers Coordinate sales distribution by establishing sales territories, quotas, and goals and establish training programs for sales representatives. Analyze sales statistics gathered by staff to determine sales potential and inventory requirements and monitor the preferences of customers.	Enterprising District Sales Manager; Export Manager	376,300	817	198	Below Avg Growth	\$62,500 \$108,140	🧠💰

🇪 Energy Occupation

☀️ Bright Outlook

⚙️ High Skill

💰 High Wage

🇺🇸 Military

MARKETING

North Dakota Marketing Related Postsecondary Programs

Pathway	Associate's Degree or Less	Bachelor's Degree	Master's Degree or More
Marketing Communications	Advertising and Marketing (DCB) Advertising transfer (WSC) Information & Communications Technology (NDSCS) Mass Communications (BSC)	Business Communication (UM) Communication (UND) Mass Communication (UM) Public Relations (UM)	
Marketing Management	Advertising & Marketing (DCB) Business Management (NDSCS, RC, UTTC, WSC) Information Management (NHSC) Management Entrepreneurship (BSC) Marketing (LRSC, RC) Marketing and Management transfer (DCB) Small Business Management (DCB)	Business Management (RC, UM) Management (MiSU, NDSU) Management Communication (NDSU) Marketing (MiSU, NDSU, RC, UM, UND) Sport & Leisure Management (MaSU, UM)	Management (MiSU)
Marketing Research	Business Systems Analysis (RC)	Business Systems Analysis (RC)	
Merchandising	Marketing (LRSC, RC)	Apparel, Retail Merchandising, & Design (NDSU) Operations and Supply Chain Management (UND)	Merchandising (NDSU)
Professional Selling	Entrepreneurship (NDSCS, TMCC) Sales (NDSCS)	Art Entrepreneurship (DSU) Entrepreneurship (UND)	

North Dakota Postsecondary Institutions Offering Marketing Related Programs

BSC	Bismarck State College	www.bismarckstate.edu	NHSC	Nueta Hidatsa Sahnish College	http://nhsc.edu
CCCC	Cankdeska Cikana Community College	www.littlehoop.edu	RC	Rasmussen College	www.rasmussen.edu
DCB	Dakota College at Bottineau	www.dakotacollege.edu	UTTC	United Tribes Technical College	www.uttcc.edu
DSU	Dickinson State University	www.dickinsonstate.edu	UM	University of Mary	www.umary.edu
LRSC	Lake Region State College	www.lrsc.edu	UND	University of North Dakota	www.und.edu
MISU	Minot State University	www.minotstateu.edu	VCSU	Valley City State University	www.vcsu.edu
NDSCS	ND State College of Science	www.ndscs.edu	WSC	Williston State College	www.willistonstate.edu
NDSU	ND State University	www.ndsu.edu			

AMANDA MARTIN Drake High School

The last year in college was the tipping point to some major changes in Amanda's career planning. She was majoring in Psychology at the University of Minnesota, yet lacked the motivation to pursue the graduate school training needed to pursue careers in the psychology field. It took some time for her to process her interest in helping people, working on a team, and being part of a work environment that changes from day-to-day.

Amanda is a Member Relations Specialist with the North Dakota Farmers Union (NDFU). NDFU was founded in 1927 with the mission to have fair market prices and a better quality of life for family farmers. NDFU provides a united voice for family agriculture and rural communities. There is also an exceptional youth program that includes fun and educational camps for kids.

She works from home, and doesn't have an 8-to-5 schedule every day. She travels often to meet with members and that means working late at night, early in the morning, or on weekends. She enjoys the changing schedule

because it makes the job interesting. Because she wants to be successful in her position, she has educated

herself on farm policy and agriculture to better understand and appreciate the efforts of North Dakota farmers and ranchers.

Amanda is responsible for working with 12 counties in the north central part of the state. She is a liaison between membership and the state office. She assists with events, programs, and activities for both the local membership and statewide. She also is the project manager of Grow to Lead, a 2-year leadership program. The program educates participants about the organization and provides leadership skills training that can be used to advocate for family farm agriculture and rural communities.

Future Business Leaders of America (FBLA) helped Amanda prepare for college and the transition into the workforce. She competed in the Job Interview and Future Business Leader events, and she also served as a state officer. Because of FBLA, Amanda learned how to prepare a resume, communicate clearly, be confident in her ideas, and use leadership skills to manage projects and teams. She learned how to manage budgets and business expenses. Amanda appreciates the guidance she received from Joan Birdsell, the Drake FBLA Advisor. "She knew I could succeed and showed me the way



to accomplish my goals. I don't think I ever told her, but I appreciated the time she spent with me."

Amanda suggests that it may take some time to find a career that you are passionate about. "Your work ethic, compassion for others, reliability, and making smart decisions will help you prepare for life after high school. As time goes on, your work values, interests, and needs will change."



Cluster: Marketing Pathway: Marketing Communications

SCIENCE, TECHNOLOGY, ENGINEERING & MATHEMATICS

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.

		National	ND Outlook 2014-2024			ND Earnings Outlook	
Occupational Title/Description	Holland Code Related Occupations	Number Employed	Number Employed	Total Openings	Long-Term Growth Outlook	Annual Entry-Level Wages Annual Average Wages	Occupational Trait(s)
Postsecondary Programs – High School Diploma, Certificate, or Associate's Degree							
Civil Engineering Technicians 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.	Realistic Geotechnical Engineering Technician; Highway Engineering Technician	74,000	519	190	Avg to Near Avg Growth	\$40,490 \$51,850	💰
Mechanical Drafters Prepare detailed working diagrams of machinery and mechanical devices, including dimensions, fastening methods, and other engineering information.	Realistic Aeronautical Drafter; Automotive Design Drafter	65,700	171	22	Below Avg Growth	\$35,570 \$46,520	
Postsecondary Programs – Bachelor's Degree or Higher							
Agricultural Engineers Apply knowledge of engineering technology and science to agricultural problems concerned with power and machinery, electrification, structures, soil and water conservation, and processing of agricultural products.	Investigative Agricultural Production Engineer; Farm Equipment Engineer	2,900	21	5	Below Avg Growth	\$65,600 \$81,010	🧠💰
Chemical Engineer Design chemical plant equipment and devise processes for manufacturing chemicals and products, such as gasoline, synthetic rubber, plastics, detergents, cement, paper, and pulp, by applying principles and technology of chemistry, physics, and engineering.	Investigative Fuels Engineer; Plastics Engineer	34,300	19	8	Avg to Near Avg Growth	\$65,040 \$93,880	🇺🇸🧠💰
🇺🇸 Energy Occupation ☀️ Bright Outlook 🧠 High Skill 💰 High Wage 🇺🇸 Military							

KELSEY HIBL Dickinson High School

Kelsey was in a computer lab during her senior year to complete a career assessment that would give career options based on interest and personality. The results listed Industrial Engineering and other occupations that were management based. After doing some research, she realized that she had been doing industrial engineering types of activities already and decided to schedule a tour at South Dakota School of Mines and Technology.

Kelsey's college major is Industrial Engineering and Engineering Management. She enjoys problem solving and working with her hands which represents the engineering aspect, and also likes working with people and entrepreneurship in the management field. Being able to learn about both aspects of engineering and management within one degree made selecting a college major easy.

Internships have been a big part of Kelsey's education. She has had a range of experiences in Manufacturing, Business and Management at Worthington Industries



South Dakota; Emerson Process Management in Iowa; and Bombardier Recreational Products (BRP) in Sturtevant, Wisconsin. Kelsey has also completed Business Analytics, Financial Accounting, and Economics for Managers sections as part of HBX Credential of Readiness (CORE). Learning business skills in addition to her engineering studies have enhanced her skills for the future. After graduation in December of 2017, she hopes to work in industry for a few years, and would like to start her own company in the future.

When asked about her favorite memory as a Technology Student Association (TSA) member, Kelsey shared this: "It was my very first year at TSA conference. I had decided to run for office, and I had to get up and give my pitch as to why everyone should vote for me. I remember being so nervous that I could feel my legs shaking, and I was barely able to get my words out. The next day, I was announced as a new member to the officer team and I continued as a state officer until graduation. TSA taught me how to be a leader, a hard worker, a public speaker, and a team member. I still reference my leadership binder to remind me of techniques and strategies to be a good leader."

When asked about life after high school, Kelsey



said, "I don't think anyone is every really ready for life after high school because there are so many unknowns. My best advice would be to embrace every opportunity you can. Join clubs and try them out, and if you don't like them, try something else. College is a great place to meet people, make connections, learn more than you ever thought possible, and really figure out who you are as a person and what you want for your life."

Cluster: STEM Pathway: Engineering & Technology

SCIENCE, TECHNOLOGY, ENGINEERING & MATHEMATICS

Postsecondary Programs – Bachelor's Degree or Higher

Electrical Engineers Research, design, develop, test, or supervise the manufacturing and installation of electrical equipment, components, or systems for commercial, industrial, military, or scientific use.	Investigative Electrical Systems Engineer; Power Distribution Engineer	178,400	402	146	Avg to Near Avg Growth \$64,600 \$88,280	\$
Hydrologists Research the distribution, circulation, and physical properties of underground and surface waters; and study the form and intensity of precipitation, its rate of infiltration into the soil, movement through the earth, and its return to the ocean and atmosphere.	Investigative Hydrogeologist; Surface Hydrologist	7,000	32	11	Below Avg Growth \$56,660 \$70,280	⚙️ \$
Industrial Engineers Design, develop, test, and evaluate integrated systems for managing industrial production processes, including human work factors, quality control, inventory control, logistics and material flow, cost analysis, and production coordination.	Investigative Efficiency Engineer; Manufacturing Engineer	241,100	394	164	Avg to Near Avg Growth \$49,000 \$76,720	E ⚙️ \$
Mechanical Engineer 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.	Realistic Combustion Engineer; Engine Designer; Tool and Die Engineer	277,500	506	202	Below Avg Growth \$47,800 \$73,880	⚙️ \$
Microbiologists Investigate the growth, structure, development, and characteristics of microscopic organisms, such as bacteria, algae, or fungi. Includes microbiologists who study the relationship between organisms and disease.	Investigative Bacteriologist; Public Health Microbiologist; Virologist	22,400	30	10	Below Avg Growth \$43,530 \$53,200	⚙️ \$
Mining and Geological Engineers Conduct sub-surface surveys to identify the characteristics of potential land or mining development sites. May specify the ground support systems, processes and equipment for safe, economical, and environmentally sound extraction or underground construction activities.	Investigative Geophysical Engineer; Mineral Engineer; Seismic Engineer	8,300	124	33	Zero to Declining Growth \$60,130 \$101,080	E ⚙️ \$
Zoologists and Wildlife Biologists Study the origins, behavior, diseases, genetics, and life processes of animals. May specialize in wildlife research and management. Collect and analyze biological data to determine the environmental effects of present and potential use of land and water habitats.	Investigative Herpetologist; Ichthyologist; Marine Biologist; Ornithologist	21,300	144	44	Below Avg Growth \$36,540 \$60,300	⚙️ \$

North Dakota STEM Related Postsecondary Programs

Pathway	Certificate or Associate's Degree	Bachelor's Degree	Master's Degree or More
Engineering & Technology	Architectural Drafting & Estimating Technology (NDSCS) Engineering Technology (BSC) Geomatics (Land Surveying) (BSC) Land Surveying and Civil Engineering (NDSCS) Nuclear Power Technology (BSC) Petroleum Production Technology (BSC, WSC) Engineering transfer (BSC, CCCC, DCB, DSU, NDSCS, NHSC, SBC, TMCC, UTTC, WSC) Robotics, Automation & Mechatronics Technology (NDSCS) Simulator Maintenance Technology (LRSC) Technical Studies (BSC, NDSCS)	Agricultural and Biosystems Engineering (NDSU) Chemical Engineering (UND) Civil Engineering (NDSU, UND) Computer Engineering (NDSU) Construction Engineering (NDSU) Electrical Engineering (NDSU, UND) Engineering Science (UM) Geological Engineering (UND) Industrial Engineering and Management (NDSU) Industrial Technology (UND) Manufacturing Engineering (NDSU) Mechanical Engineering (NDSU, UJ, UND) Petroleum Engineering (UND)	Agricultural and Biosystems Engineering (NDSU) Aviation (UND) Chemical Engineering (UND) Civil Engineering (NDSU, UND) Electrical Engineering (UND) Electrical/Computer Engineering (NDSU) Environmental Engineering (NDSU, UND) Geography and Information Sci. (UND) Industrial Engineering & Management (NDSU) Manufacturing Engineering (NDSU) Mechanical Engineering (NDSU, UND) Petroleum Engineering (UND) Software Engineering (NDSU)
Science & Mathematics	Biology transfer (BSC, DCB, TMCC, WSC) Biotechnology transfer (NDSCS) Chemistry transfer (BSC, DCB, NDSCS, TMCC, WSC) Environmental Science Transfer (NHSC, TMCC, UTTC, WSC) Environmental Tech - Lab & Field Technician (DCB) Environmental Tech - Natural Resource Mgmt. (DCB) Mathematics transfer (BSC, DCB, NDSCS, NHSC, TMCC, WSC) Natural Science transfer (NDSCS, TMCC) Pharmacy transfer (DCB, WSC) Physical Science transfer (NDSCS, WSC) Physics transfer (BSC, WSC) Science transfer (NHSC)	Atmospheric Sciences (UND) Biochemistry and Molecular Biology (NDSU) Biology/Biological Science (DSU, MaSU, MiSU, NDSU, UJ, UM, UND, VCSU) Biotechnology (NDSU) Botany (NDSU) Chemistry (DSU, MaSU, MiSU, NDSU, UJ, UM, UND, VCSU) Computer Science (DSU, MiSU, RC, UM, UND) Earth Science (MiSU) Environmental Science (DSU, NHSC, SBC, UTTC, UND, VCSU) Forensic Science (UND) Geology (MiSU, NDSU, UND) Horticulture (NDSU) Mathematics (DSU, MaSU, MiSU, NDSU, UJ, UM, UND, VCSU) Microbiology (NDSU) Physics (NDSU, UND) Unmanned Aircraft Systems Operations (UND) Zoology (NDSU)	Applied Statistics (NDSU) Atmospheric Sciences (UND) Biochemistry (NDSU) Biology (NDSU, UND) Biomedical Engineering (NDSU) Chemistry (NDSU, UND) Earth System Science and Policy (UND) Entomology (NDSU) Environmental & Conservation Science (NDSU, SBC) Geology (UND) Horticulture (NDSU) Mathematics (NDSU, UND) Microbiology (NDSU) Physics/Astrophysics (NDSU, UND) Plant Pathology (NDSU) Plant Sciences (NDSU) Space Studies (UND)

North Dakota Postsecondary Institutions Offering STEM Related Programs





BSC	Bismarck State College	www.bismarckstate.edu	NHSC	Nueta Hidatsa Sahnish College	http://nhsc.edu
CCCC	Cankdeska Cikana Community College	www.littlehoop.edu	SBC	Sitting Bull College	www.sittingbull.edu
DCB	Dakota College at Bottineau	www.dakotacollege.edu	TMCC	Turtle Mountain Community College	www.tm.edu
DSU	Dickinson State University	www.dickinsonstate.edu	UTTC	United Tribes Technical College	www.uttc.edu
LRSC	Lake Region State College	www.lrsc.edu	UJ	University of Jamestown	www.uj.edu
MaSU	Mayville State University	www.mayvillestate.edu	UM	University of Mary	www.umary.edu
MiSU	Minot State University	www.minotstateu.edu	UND	University of North Dakota	www.und.edu
NDSCS	ND State College of Science	www.ndscs.edu	VCSU	Valley City State University	www.vcsu.edu
NDSU	ND State University	www.ndsu.edu	WSC	Williston State College	www.willistonstate.edu

TRANSPORTATION, DISTRIBUTION & LOGISTICS

Planning, management, and movement of people, materials, and goods by road, pipeline, air, rail and water and related professional and technical support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.

		National	ND Outlook 2014-2024			ND Earnings Outlook	
Occupational Title/Description	Holland Code Related Occupations	Number Employed	Number Employed	Total Openings	Long-Term Growth Outlook	Annual Entry-Level Wages Annual Average Wages	Occupational Trait(s)
Postsecondary Programs – High School Diploma, Certificate, or Associate’s Degree							
Aerospace Engineering and Operations Technicians Operate, install, calibrate, and maintain integrated computer/communications systems, simulators, and other data acquisition, test, and measurement instruments and equipment.	Realistic Altitude Chamber Technician; Wind Tunnel Technician	11,400	29	11	Avg to Near Avg Growth	\$45,310 \$58,920	 
Aircraft Mechanics and Service Technicians Diagnose, adjust, repair, or overhaul aircraft engines and assemblies, such as hydraulic and pneumatic systems. Includes helicopter and aircraft engine specialists.	Realistic Aircraft Engine Specialist; Flight Test Mechanic	119,900	268	76	Below Avg Growth	\$36,240 \$58,110	  
Ambulance Drivers and Attendants, Except Emergency Medical Technicians Drive ambulance or assist ambulance driver in transporting sick, injured, or convalescent persons. Assist in lifting patients.	Realistic Emergency Medical Services (EMS) Driver	19,600	328	129	High Growth	\$17,070 \$22,220	
Automotive Service Technicians and Mechanics Diagnose, adjust, repair, or overhaul automotive vehicles. Test vehicle components and systems, using equipment such as infrared engine analyzers, compression gauges and computerized diagnostic devices.	Realistic Transmission Specialist; Brake Technician; Hybrid Car Mechanic	739,900	2,494	668	Zero to Declining Growth	\$25,400 \$42,250	 
Bus and Truck Mechanics/Diesel Engine Specialists 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.	Realistic Biodiesel Engine Specialist; Tractor Trailer Mechanic	263,900	2,393	411	Zero to Declining Growth	\$36,910 \$51,700	   
Bus Drivers, School or Special Client Transport students or special clients, such as the elderly or persons with disabilities. Ensure adherence to safety rules. May assist passengers in boarding or exiting.	Realistic School Bus Operator; Special Education Bus Driver	497,300	1,388	392	Avg to Near Avg Growth	\$25,310 \$41,790	
Cargo and Freight Agents Expedite and route movement of incoming and outgoing cargo and freight shipments in airline, train, and trucking terminals, and shipping docks. Take orders from customers and arrange pickup of freight and cargo for delivery to loading platform.	Conventional Cargo Router; Freight Shipping Agent	78,800	142	61	Avg to Near Avg Growth	\$33,060 \$40,930	
Commercial Pilots Pilot and navigate the flight of fixed-winged aircraft on non-scheduled air carrier routes, or helicopters. Requires Commercial Pilot certificate. Includes charter pilots with similar certification, and air ambulance and air tour pilots.	Realistic Aerial Crop Duster; Flight Instructor (Commercial Pilots); Helicopter Pilot	43,500	269	98	Avg to Near Avg Growth	\$41,270 \$69,280	 
Crane and Tower Operators Operate mechanical boom and cable or tower and cable equipment to lift and move materials, machines, or products in many directions.	Realistic Boom Crane Operator; Coal Tower Operator	45,500	363	126	Zero to Declining Growth	\$39,370 \$56,950	 
Freight, Stock and Material Handlers Manually move freight, stock, or other materials or perform other general labor. Includes all manual laborers not elsewhere classified.	Realistic Cargo Handler	2,441,300	9,190	2,735	Zero to Declining Growth	\$23,600 \$32,520	
Industrial Truck and Tractor Operators Operate industrial trucks or tractors equipped to move materials around a warehouse, storage yard, factory, construction site, or similar location.	Realistic Forklift Operator	530,900	1,221	308	Below Avg Growth	\$31,970 \$42,470	
Packers and Packagers, Hand Pack or package by hand a wide variety of products and materials.	Realistic Egg Packer; Gift Wrapper; Grocery Store Bagger	695,400	1,132	374	Below Avg Growth	\$18,750 \$25,340	
Shipping, Receiving, and Traffic Clerks Duties include assembling, addressing, stamping, and shipping merchandise or material; receiving, unpacking, verifying and recording incoming merchandise or material; and arranging for the transportation of products.	Conventional Route Delivery Clerk; Store Receiving Clerk	670,200	1,736	377	Zero to Declining Growth	\$25,780 \$34,090	
Supervisors of Helpers, Laborers, and Material Movers Directly supervise and coordinate the activities of helpers, laborers, or material movers.	Enterprising Crew Supervisor; Warehouse Supervisor	173,100	1,084	348	Zero to Declining Growth	\$37,600 \$53,800	
Tank Car, Truck, and Ship Loaders Load and unload chemicals and bulk solids, such as coal, sand, and grain into or from tank cars, trucks, or ships using material moving equipment. May perform a variety of other tasks relating to shipment of products.	Realistic Barge Loader; Rail Car Loader; Ship Unloader	13,000	293	114	Below Avg Growth	\$22,060 \$38,690	

TRANSPORTATION, DISTRIBUTION & LOGISTICS

		National	ND Outlook 2014-2024			ND Earnings Outlook	
Occupational Title/Description	Holland Code Related Occupations	Number Employed	Number Employed	Total Openings	Long-Term Growth Outlook	Annual Entry-Level Wages Annual Average Wages	Occupational Trait(s)
Postsecondary Programs – High School Diploma, Certificate, or Associate’s Degree							
Transportation, Storage, and Distribution Managers Plan, direct, or coordinate transportation, storage, or distribution activities in accordance with organizational policies and applicable government laws or regulations. Includes logistics managers.	Enterprising Distribution Center Manager; Traffic Safety Administrator; Warehouse Manager	111,600	382	84	Zero to Declining Growth	\$59,450 \$85,720	 
Postsecondary Programs – Bachelor’s Degree or Higher							
Logisticians Analyze and coordinate the logistical functions of a firm or organization. Responsible for the entire life cycle of a product, including acquisition, distribution, internal allocation, delivery, and final disposal of resources.	Enterprising Logistics Analyst; Logistics Planner	130,400	259	52	Below Avg Growth	\$45,540 \$61,410	 



Energy Occupation



Bright Outlook



High Skill



High Wage



Military

North Dakota Transportation, Distribution & Logistics Related Postsecondary Programs

Pathway	Associate's Degree or Less	Bachelor's Degree	Master's Degree or More
Facility & Mobile Equipment Maintenance	Auto Body Repair and Refinishing Technology (NDSCS) Auto Collision Technology (BSC) Auto Technology (BSC, BJCC, CCCC, LRSC, NDSCS, UTTC) Case IH (NDSCS) Caterpillar Dealer Service Technician (NDSCS) Diesel Technology (NDSCS) Electronics Technology (BSC) Electronics & Telecommunications Technology (BSC) Geographic Information Systems Technician (BSC) Komatsu (NDSCS) Transportation Technology (WSC)		
Health, Safety & Environmental Management	Environmental Public Health (TMCC)	Environmental Design (NDSU) Environmental Health (DSU)	
Logistics Planning & Management Services	Information Management Systems (NHSC, RC) Information Processing Specialist (BSC) Information and Communications Technology (NDSCS) Information Technology (DCB, LRSC, WSC) Management Information Systems transfer (NDSCS)	Business Process Integration Management (VCSU) Business Management (UM) Information Technology Management (UM) Management Information Systems (MiSU, NDSU, RC) Operations/Supply Chain & Logistics Mgmt. (RC, UND)	Business Administration/Project Management (UM) Transportation and Logistics (NDSU) Transportation and Urban Systems (NDSU)
Sales & Service	Business Management (NDSCS, WSC) Marketing & Management transfer (DCB, LRSC, RC)	Airport Management (UND) Marketing (MiSU, NDSU, RC, UM, UND)	Merchandising (NDSU)
Transportation Operations	Airline Transport Pilot (FFS) CDL/Heavy Equipment (CCCC, SBC, TMCC, UTTC) Commercial Pilot (EATC, FFS, GFKFS) Heavy Equipment Operator (UTTC) Instrumental/Multi-Engine Rating (EATC, FFS, GFKFS) Private Pilot (EATC, FFS, GFKFS) Recreational/Sport Pilot (EATC, FFS)	Air Traffic Management(UND) Commercial Aviation (UND) Aviation Management (UND) Aviation Technology Management (UND) Flight Education (UND) Unmanned Aircraft Systems Operations (UND)	Aerospace Sciences (UND) Aviation (UND)
Transportation Systems/ Infrastructure Planning, Management & Regulation		Airport Management (UND) Aviation Technology Management (UND) Operations/Supply Chain & Logistics Mgmt. (RC, UND) Public Administration (UND)	Transportation and Logistics (NDSU) Transportation and Urban Systems (NDSU)
Warehousing & Distribution Center Operations	Management (BSC)	Business Administration (VCSU) Business Process Integration Management (VCSU)	

North Dakota Postsecondary Institutions Offering Transportation, Distribution & Logistics Related Programs

BSC	Bismarck State College	www.bismarckstate.edu	NDSCS	ND State College of Science	www.ndscs.edu
BJCC	Burdick Job Corps Center	http://quentinnburdick.jobcorps.gov	NDSU	ND State University	www.ndsu.edu
CCCC	Cankdeska Cikana Community College	www.littlehoop.edu	NHSC	Nueta Hidatsa Sahnish College	http://nhsc.edu
DCB	Dakota College at Bottineau	www.dakotacollege.edu	RC	Rasmussen College	www.rasmussen.edu
DSU	Dickinson State University	www.dickinsonstate.edu	SBC	Sitting Bull College	www.sittingbull.edu
EATC	Executive Air Taxi Corporation	www.executive-air.com	TMCC	Turtle Mountain Community College	www.tm.edu
FFS	Fargo Flight School	www.fargojet.com/school	UTTC	United Tribes Technical College	www.uttcc.edu
GFKFS	GFK Flight Support	www.flygfk.com	UM	University of Mary	www.umary.edu
LRSC	Lake Region State College	www.lrsc.edu	UND	University of North Dakota	www.und.edu
MAC	Minot Aero Center	http://minotaerocenter.com	VCSU	Valley City State University	www.vcsu.edu
MISU	Minot State University	www.minotstateu.edu	WSC	Williston State College	www.willistonstate.edu

Why Choose a NDUS School?

With five colleges and six universities, the North Dakota University System (NDUS) offers the education that's right for you. From single courses to one-year technical programs to professional degrees in law, medicine and pharmacy – the NDUS will help prepare you for your career goals.

*At North Dakota
colleges and
universities,
it's all about
YOU!*

How do I know which school is the right fit for me? Get started here:

- ◆ Find the best fit for your educational needs and interests at **www.NDChoose.com/programs**.
- ◆ See the campus! Schedule a visit and talk with other students to learn what they think.
- ◆ Compare your financial aid options at each institution to make sure you're making the most of your educational investment.

NDUS institutions offer:

- ◆ **Quality Programs:** From accounting to anatomy, engineering to English, web design to welding – the NDUS offers more than 700 programs.
- ◆ **Regionally Competitive Cost:** Tuition and fees are competitively priced when compared to regional and national counterparts. Plus, it won't break the bank to go home for a weekend.
- ◆ **Development Opportunities:** The faculty and staff at the NDUS want you to be successful, both personally and professionally. They're committed to challenging and encouraging you to meet your potential.
- ◆ **Broad Perspective Beyond the Books:** You will find extensive intramural teams and extracurricular organizations throughout the 11 colleges and universities. No matter your interest, you'll find a great experience.
- ◆ **Life in a Global Community:** Join a diverse community with students from many nations and backgrounds. Opportunities to network and create partnerships will take you beyond your college development.

NDUS Admission Requirements

2-YEAR COLLEGE ADMISSION REQUIREMENTS:

2 YEARS

- ▼ A high school graduate may be admitted to any two-year campus. Each campus may have requirements that are in addition to the general admission requirement.
- ▼ GED tests may be used to satisfy the high school graduation requirement.
- ▼ For technical programs, high school graduation is recommended. Applicants 17 years of age or older may be admitted if program standards are met.

4-YEAR COLLEGE ADMISSION REQUIREMENTS:

4 YEARS

- ▼ 4 units of English
- ▼ 3 units of mathematics (Algebra I and above)
- ▼ 3 units of lab science (including at least two in biology, chemistry, physics or physical science)
- ▼ 3 units of social studies (not including consumer education, cooperative marketing, orientation to social science, or marriage/family)

Check out the admission requirements to the left to help you find the school that is the best fit for you and your goals.

Additional courses may be required before you can be admitted to some programs.

Students who do not meet the admission requirements for a 4-year university are welcome to attend one of the five 2-year colleges. Upon satisfactory completion of 24 credits, the student will be eligible to transfer to a 4-year university.

What Can You Earn?

Americans with a bachelor's degree earn **65% more** than high school graduates over their lifetime. Associate degree-holders earn **27% more** than a high school graduate over their lifetime.

*Based on median earnings in 2011—Education Pays 2013, Published by the College Board

Checklist for Admission to a College or University

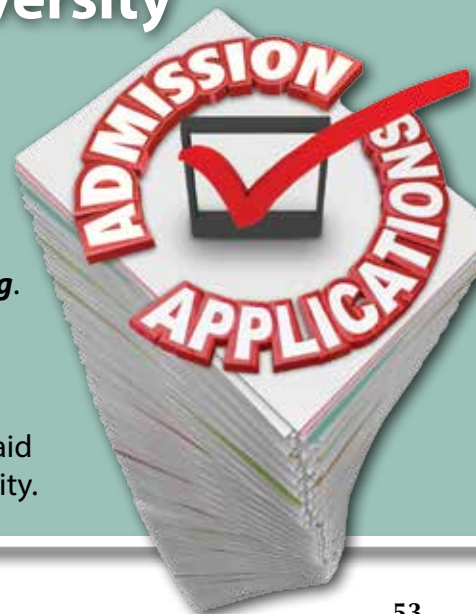
Consider more than one campus at www.NDChoose.com.

Look through course catalogues and schedule campus visits.

Take the ACT—go to www.actstudent.org.

Remember to apply by application deadlines for admission and the FAFSA.

Weigh your options, including financial aid packages, and select a college or university.



YOUR SCHOOL DOESN'T OFFER THE CLASS YOU WANT?

Regardless of the school you attend, ND provides a way for you to take classes that may not be offered by your school, or are offered, but impossible to work into your schedule.

How? North Dakota Center for Distance Education

North Dakota Center for Distance Education (NDCDE) offers over 300 fully accredited (AdvancedED), online and blended courses for students in grades 4-12. To assure the courses fulfill your needs, the courses:

- are self-paced (you complete lessons at your own speed),
- may be enrolled in anytime (all twelve months of the year),
- include all core courses, dozens of electives, a growing number of career and technical courses, credit recovery and advanced college placement (AP) courses,
- provide diagnostics and adaptive lessons that respond to your strengths and weaknesses, and
- have teachers assigned to you who are ready to help you one-on-one via phone, Skype, text, email, virtual classroom, Facebook, Twitter, or whatever means works for you, and in a growing number of courses, are blended with hands-on projects.

NDCDE can supplement and enhance what your home school provides to you. Or if your need goes beyond supplementation, NDCDE is able to provide a full curriculum of courses allowing you to earn an NDCDE issued high school diploma.

CONTACT US AT:

North Dakota Center for Distance Education
Phone: 701-298-4830 www.NDCDE.org

So....how good is NDCDE? For the school year 2016-17 NDCDE was rated the seventh best online school in the United States!

DUAL CREDIT COURSES

North Dakota University System colleges and universities, in partnership with area high schools, offer several CTE and general education courses for dual credit. Many schools award dual credit for the college class in lieu of their high school class equivalent.



Advantages of Dual Credit Courses:

- ✓ You can complete a college class or two by successfully completing dual credit courses in high school.
- ✓ Students and parents can save by not having to pay full tuition for dual credit courses.
- ✓ Students can ease into college classes in a comfortable, familiar environment with smaller class sizes.
- ✓ The letter grade received in the course is the same and is posted on both high school and college transcripts.
- ✓ Successful completion of a dual credit class may fulfill one of the requirements of the North Dakota Academic Scholarship.



DISTANCE EDUCATION COURSES

Access to higher education is
EASIER THAN EVER
with the North Dakota
University System (NDUS).



Online and interactive video network
opportunities give you freedom to
choose courses from several campuses
while completing just one application.



NDUS schools also offer numerous
individual online courses for students
who prefer a mix of on-campus and
online courses.

North Dakota Postsecondary Programs and 2017-18 Estimated On-Campus Budgets for Resident Dependent Students

	School	City	Website	Phone Number	Tuition & Fees	Books & Supplies	Room & Board	Total
NDUS 2-Yr.	Bismarck State College	Bismarck	bismarckstate.edu	800-445-5073	\$4,590	\$1,000	\$6,170	\$11,760
	Dakota College at Bottineau	Bottineau	dakotacollege.edu	800-542-6866	\$4,419	\$1,373	\$6,945 ³	\$12,737
	Lake Region State College	Devils Lake	lrsc.edu	800-443-1313	\$4,336	\$1,000	\$6,200	\$11,536
	North Dakota State College of Science	Wahpeton	ndscs.edu	800-342-4325	\$4,879 ⁴	\$1,000	\$6,158	\$12,037
	Williston State College	Williston	willistonstate.edu	888-863-9455	\$5,162 ¹	\$1,100	8,772 ³	\$15,034
NDUS 4-Yr.	Dickinson State University	Dickinson	dickinsonstate.edu	800-279-4295	\$6,554	\$1,200	\$6,724	\$14,478
	Mayville State University	Mayville	mayvillestate.edu	800-437-4104	\$6,456	\$1,000	\$7,624	\$15,080
	Minot State University	Minot	minotstateu.edu	800-777-0750	\$6,810	\$1,100	\$6,344	\$14,254
	North Dakota State University	Fargo	ndsu.edu	866-924-8969	\$8,544	\$800	\$8,586	\$17,930
	University of North Dakota	Grand Forks	und.edu	800-225-5863	\$8,448	\$1,000	\$8,548	\$17,996
	Valley City State University	Valley City	vcsu.edu	800-532-8641	\$7,407	\$1,150	\$6,513	\$15,070
Private	Burdick Job Corps Center	Minot	quentinnburdick.jobcorps.gov	701-857-9600	See page 58 for more information.			
	Lynnes Welding Training, Inc.	Fargo or Bismarck*	learntoweld.com	701-373-0658	\$12,375	\$850	\$3,450 ²	\$16,675
	Rasmussen College	Bismarck	rasmussen.edu	800-817-0009 or 701-277-3889	Costs vary, please contact Rasmussen College for more information.			
	Trinity Bible College	Ellendale	trinitybiblecollege.edu	800-523-1603	\$16,040	\$1,000	\$6,060 ³	\$23,100
	University of Jamestown	Jamestown	uj.edu	800-336-2554	\$20,578	\$1,300	\$7,350	\$29,228
	University of Mary	Bismarck	umary.edu	800-288-6279	\$18,224	\$1,244	\$6,970	\$26,438
Tribal	Cankdeska Cikana Community College	Fort Totten	littlehoop.edu	888-783-1463	\$3,300 ⁵	\$700	\$4,000 ²	\$8,000
	Nueta Hidatsa Sahnish College	New Town	nhsc.edu	701-627-4738	\$3,870	\$1,200	\$10,440	\$15,510
	Sitting Bull College	Fort Yates	sittingbull.edu	701-854-8000	\$3,910	\$1,200	\$5,846	\$10,956
	Turtle Mountain Community College	Belcourt	tm.edu	701-477-7862	\$2,050	\$400	\$3,664 ²	\$6,114
	United Tribes Technical College	Bismarck	uttc.edu	888-643-8882	\$4,252	\$1,400	\$5,100	\$10,752
Cosmetology/Barber	Headquarters Academy of Hair Design	Minot	hqacademyofhair.com	800-891-5135	\$13,815	\$370	\$8,880	\$23,065
	Josef's School of Hair Design, Inc. – Downtown Fargo	Fargo	josefsschoolofhairdesign.com	701-235-9910	\$16,600	\$1,800	\$7,700 ¹	\$26,100
	Josef's School of Hair Design, Inc. – Fargo Josef's West and Grand Forks	Fargo/Grand Forks	josefsschoolofhairdesign.com	701-772-2728	\$17,100	\$1,800	\$7,700 ¹	\$26,600
	JZ Trend Academy Paul Mitchell Partner School	Bismarck	jz.paulmitchell.edu	701-223-8154	\$14,395	\$2,000	\$9,432 ²	\$28,145
	Moler Barber College of Hairstyling	Fargo	molerbarberfargo.com	701-232-6773	\$6,437	\$855	\$5,335 ²	\$12,627
	The Hair Academy	Bismarck	thehairacademynd.com	800-793-9594	\$10,920	\$1,499	\$11,560	\$23,979
	The Salon Professional Academy	Fargo	tspafargo.com	877-478-1772	\$17,290	\$2,325	\$11,088 ²	\$30,703
Flight	Executive Air Taxi Corporation	Bismarck	executive-air.com	701-258-5024	Costs may vary. Contact individual entities for more information.			
	Fargo Jet Center	Fargo	fargojet.com	800-770-0538				
	GFK Flight Support	Grand Forks	flygfk.com	701-772-5504				
	Minot Aero Center/Pietsch Aircraft	Minot	minotaerocenter.com	701-852-4092				

Note: Totals do not include Personal, Recreational or Miscellaneous costs which average approximately \$3,400. Costs may be different for specialized programs. Contact the college/program for more information.

* Bismarck Lynnes Welding Training, Inc. does not qualify for financial aid.

Footnotes:

- 1 Based on 15 credits per term
- 2 Estimate for off campus housing, school does not have dorm facilities
- 3 Based on double occupancy room and 19 meals, seven-day plan
- 4 Based on 16 credits per term
- 5 Based on 12 credits per term

FAFSA IS THE FIRST STEP TO GETTING MONEY FOR COLLEGE.



FAFSA stands for the Free Application for Federal Student Aid, and should be completed between October and April of your senior year.

Complete the FAFSA as soon after October 1, 2017 as possible using the results from your 2016 Federal and State tax returns. Grants are often first come, first served so applying early is helpful. You should definitely apply before April 15, 2018.

Cut college costs!

- Take dual credit and advanced placement classes in high school.
- Apply for scholarships in the fall of your senior year.
- Community colleges are typically less expensive than universities. Online classes usually cost more than attending on campus.
- Rent books rather than purchasing them.
- Invest time researching majors you are interested in and the types of jobs you would enjoy. When students spend a couple years in college trying to decide on a major, they are often adding years to the cost of their education to complete the required classes.
- If you need a private student loan in addition to a federal student loan, compare Bank of North Dakota's student loan interest rates with other options. BND rates are typically lower than other private options.



Keep learning with Facebook Live!

Every Tuesday from 4-4:15 p.m. CT, Bank of North Dakota conducts Facebook Live sessions on a variety of topics including college visits, student loans and selecting a career. Like us on Facebook and take advantage of this weekly opportunity to ask questions to the experts!

[FACEBOOK.COM/BANKOFND](https://www.facebook.com/BANKOFND)



Student loans are not free money.

Many people find themselves regretting the amount of student loans they need to repay. If you are a single person who lives in North Dakota and the first job you get out of college pays you \$40,000 per year, your take home pay will actually be about \$32,000 or \$2,666 per month.

With the \$2,666 per month figure, this table outlines your budget assuming you take out \$30,000 in student loans. If you don't feel like this is enough money to accommodate the lifestyle you would like when you graduate college, seriously consider the amount of money you take out in student loans.

Decreasing the amount you take out in student loans will free up more funds for you to spend on other things.

Item	Expense amount	% of monthly take-home pay*
Student loan payment (Assuming \$30,000 in loans at 3.76%)	\$200	8%
Housing (Rent, mortgage, condo maintenance fee, furniture,household items)	\$800	30%
Utilities (Phone, electricity, gas)	\$266	10%
Credit cards	\$80	3%
Food (Groceries, eating out)	\$400	15%
Transportation (Car payments, insurance, gas, maintenance)	\$266	10%
Other savings and investments	\$266	10%
Personal expenses (Entertainment, clothing, vacations, personal care, pet care, gifts, car insurance)	\$388	14%
TOTAL EXPENSES	\$2,666	100%

*<https://www.quicken.com/home-budget-cost-living-reality-check>

FREE!

QUENTIN N. BURDICK
JOB CORPS CENTER

Job Training and Career Placement



Job Corps is the nation's oldest and most successful job training program for young adults ages 16 through 24. After graduation, Job Corps Career Transitions Services (CTS) staff is available for student services up to a year.

ACADEMIC TRAINING

Students enroll year-round at Job Corps. They can obtain their GED or high school diploma.

CAREER & TECHNICAL TRAINING

- ■ Office Administration
- ■ Culinary Arts/Food Service
- ■ NA/HHA (Nursing Assistant/Home Health Aide)
- ■ Carpentry
- ■ Building Construction Technology
- ■ Maintenance Light Repair
- ■ Welding
- ■ Advanced Training at Dakota College at Bottineau or Minot State University
- ■ Advanced Medical Program through Dakota College at Bottineau

SINGLE PARENT PROGRAM

A Solo Parent Program is available for single parents and their dependent children. This allows students to participate in Job Corps without having to be separated from their children.

Quentinnburdick.jobcorps.gov

Burdick Job Corps provides the following:

- ■ Career Success Standards Training
- ■ A living allowance with free room and board
- ■ Basic medical and dental care
- ■ Drivers Education

It is FREE to those who qualify!



AmeriCorps
*Are you ready to
make a difference?*

- When you join AmeriCorps, your energy, ideas, and talents will be used to help others. You will learn teamwork, leadership, responsibility, and other essential skills through the AmeriCorps real-life education and work experience.
- AmeriCorps Programs provide service in one or more focus areas that include disaster services, economic opportunity, education, environmental stewardship, healthy futures, and, veterans and military families.
- AmeriCorps State Programs are open to U.S. citizens, nationals, or lawful permanent resident aliens ages 17 and older.
- Members may serve full-time or part-time over a period not to exceed 12 months.
- After completing your term of service, you will receive a Segal AmeriCorps Education Award to help pay for college, graduate school, vocational training, or to repay student loans.

For more information, visit
www.americorpsnd.com

ND Division of Vocational Rehabilitation

Make the Transition



Individuals who are typically referred to Vocational Rehabilitation (VR) include those who have a:

- ◆ Learning,
- ◆ Behavioral,
- ◆ Physical,
- ◆ Intellectual, or
- ◆ Developmental disability

To be eligible for VR services you must:

- ◆ Have a documented disability
- ◆ Be able to benefit from services that lead to employment
- ◆ Want to work

If you are eligible, VR will help you determine an appropriate employment goal. You and your counselor will work together to develop a plan which identifies the steps necessary to achieve your goal. VR may be able to help you transition from high school to work or to college in preparation for work by providing:

- ◆ **Professional Vocational Rehabilitation Counseling & Guidance** – Counseling and Guidance is of no cost to you and includes evaluations of strengths and how your disability may affect your ability to work, a comprehensive assessment of your rehabilitation needs, planning and implementing strategies to overcome barriers, and helping you adjust to and live with a disability.
- ◆ **Employment** – identification of an employment goal that is consistent with your strengths, resources, abilities, capabilities, priorities, concerns, interests, and informed choice.

For more information about Vocational Rehabilitation, please visit:

www.nd.gov/dhs/dvr

◆ **Accommodations** – if needed, adaptive aids, assistive technology, accessibility, and work site evaluations to assist you in achieving your employment goal.

◆ **Training** – tailored to meet your individual rehabilitation needs and attain your employment goal. This may include on-the-job training, internships, job mentoring, job coaching and/or academic training. This may also include helping you learn how to advocate for the services you will need to succeed in college. VR may also assist you with school costs if there is a financial need.

◆ **Job Placement** – develop resume writing skills and interview strategies, job referral, placement and follow-up services.

Vocational Rehabilitation/ Human Services Regional Offices

Region 1 - Williston Vocational Rehabilitation Northwest Human Service Center

316 Second Avenue West
Williston, ND 58802-1266
Telephone (701) 774-4662
Toll Free 1-800-231-7724

◆
**Region 2 - Minot
Vocational Rehabilitation
Lake Region Human
Service Center**
1015 South Broadway, Suite 21A
Minot, ND 58701-4667
Telephone (701) 857-8642
Toll Free 1-888-470-6968

◆
**Region 3 - Devils Lake
Vocational Rehabilitation
Lake Region Human
Service Center**
200 Highway 2 W
Devils Lake, ND 58301
Telephone (701) 665-2235
Toll Free 1-888-607-8610

◆
**Region 4 - Grand Forks
Vocational Rehabilitation
Northeast Human Service
Center**
151 S 4th Street, Suite 501
Grand Forks, ND 58201-4735
Telephone (701) 795-3100
Toll Free 1-888-256-6742

Region 5 - Fargo Vocational Rehabilitation South Central Human Service Center

1655 43rd Street South,
Suite 208
Fargo, ND 58103
Telephone (701) 298-4459
Toll Free 1-888-342-4900

◆
**Region 6 - Jamestown
Vocational Rehabilitation
South Central Human
Service Center**
520 Third Street NW
Jamestown, ND 58402-2055
Telephone (701) 253-6388
Toll Free 1-800-639-6292

◆
**Region 7 - Bismarck
Vocational Rehabilitation**
1237 West Divide Avenue,
Suite 2
Bismarck, ND 58501
Telephone (701) 328-8800
Toll Free 1-888-862-7342

◆
**Region 8 - Dickinson
Vocational Rehabilitation**
1674 15 Street West, Unit E
Dickinson, ND 58601
Telephone (701) 227-7600
Toll Free 1-888-227-7525

Relay ND TTY 1-800-366-6888

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PVT Ethan Brown
Hope-Page HS



L to R: PV2 Dane Haugen, PV2 Erik Odegaard, PV2 Gracin Clem, PV2 Austin Wolschlag, PVT Garrett Brown
Dickinson HS



PFC Derek Elverud
Devils Lake HS



PFC Jace Estenson (Left)
PFC Jaydon Grafsgaard (Right)
Devils Lake HS



PV2 Jamie Schanks
Devils Lake HS

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The Army National Guard is looking for people who can imagine the future and engineer it – the next generation of Soldiers who excel in science, technology, engineering, and math (STEM). We'll train you for high-tech jobs that build on your aptitude. Plus, we offer money for college in exchange for your part-time service.

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goang.com
1-800-972-8825

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goarmy.com

Western ND • 701-223-5455

Eastern ND • 701-277-1299

ASVAB CAREER EXPLORATION PROGRAM

Fargo • 701-234-0072 or

1-800-323-0513

AIR FORCE

airforce.com

Bismarck • 701-226-3893

Fargo • 701-277-1818

Grand Forks • 701-775-9361

Minot • 701-839-4635

MARINES

marines.com

Bismarck • 701-223-3019

Fargo • 701-277-8403

Grand Forks • 701-772-3627

Minot • 701-839-2091

NAVY

navy.com

1-800-872-6289

Fargo • 701-277-1096 (Enlisted)

Fargo • 701-239-5091 (Officer)

UNITED STATES MILITARY ACADEMY

usma.edu

West Point, NY

1-845-938-4041

UNITED STATES COAST GUARD ACADEMY

cga.edu

New London, CT

1-800-883-8724

COAST GUARD

gocoastguard.com

UNITED STATES NAVAL ACADEMY

usna.edu

Annapolis, MD

1-410-293-4361

UNITED STATES MERCHANT MARINE ACADEMY

usmma.edu

Kings Point, NY

1-516-726-5800

UNITED STATES AIR FORCE ACADEMY

academyadmissions.com

Colorado Springs, CO

1-800-443-9266

Adult Education



Adult Education provides free classes and programs that help adults over the age of 16 obtain basic educational skills needed to be productive workers, family members, and citizens. Each Adult Learning Center provides instruction for

- reading/language arts, math, science, social studies, keyboarding, and computer literacy;
- English Language Learners (ELL) for New Americans and citizenship preparation;
- the GED exam; and,
- college and career readiness.

GED... *get it now!*

The US Census data estimates more than 65,000 individuals in North Dakota are without a high school diploma. Individuals who receive a GED will earn approximately \$10,000 more annually than those who do not. This in turn, improves an individual's economic status, spending patterns and tax contributions.

North Dakota needs every able body in the workforce – a GED can provide you the skills to make a difference and launch a new career. Earn your GED now and reap the rewards.

Students can now take the GED by computer and receive instant results.



Visit www.nd.gov/dpi/SchoolStaff/AdultEd for more information.

ADULT LEARNING CENTERS

BISMARCK

Bismarck Public Schools
701-323-4530

DEVILS LAKE

Lake Region State College
701-662-1568

DICKINSON

Dickinson Public Schools
701-456-0008

FARGO

Fargo Public Schools
701-446-2806

GRAND FORKS

Grand Forks Public Schools
701-795-2785

JAMESTOWN

James Valley Career
and Technology Center
701-252-8841

MINOT

Minot Public Schools
701-857-4488

VALLEY CITY

Sheyenne Valley Area
Career & Technology Center
701-845-0256

WILLISTON

Williston State College
701-572-5886

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Living on a BUDGET

You've been hired for the first job after earning an A.A.S. degree for Pharmacy Technician. *What will your budget look like?* The numbers below are based on an entry-level salary of \$29,000*, and a \$15,000 student loan.** When making your plans for after high school, consider a budget scenario similar to the example given. See the Career Outlook User's Guide to determine a budget for your future career!

Sources:

*<https://www.ndworkforceintelligence.com/gsipub/index.asp?docid=355>

**<https://www.mappingyourfuture.org/paying/standardcalculator.cfm>

MONTHLY EXPENDITURES

Housing (rent/mortgage)	30%	\$580
Transportation (car payments, insurance, gas)	14%	\$271
Food (groceries/eating out)	12%	\$232
Personal Care (including clothing)	8%	\$155
Healthcare (doctor, dentist, insurance premiums)	10%	\$193
Student Loan (\$15,000 at 4.29% over 120 months)	8%	\$155
Utilities	5%	\$97
Entertainment (Internet, cable, vacation)	3%	\$58
Savings/Investments	10%	\$193
Total		\$1,934

Income before taxes\$29,000

Approximate take home pay\$23,200

Monthly take home pay\$1,934

Searching for a Job?

Here are some quick time-saving tips that will make the process go more smoothly.

Helpful Sources of Information

Career Builder
www.careerbuilder.com

RUReady.ND.gov
www.ruready.nd.gov

Career OneStop
www.careeronestop.org

Monster
www.monster.com

Job Service North Dakota www.jobsnd.com

- ◆ **Be Prepared.** Develop a resume that gives a prospective employer basic information about you. Check with your references before listing their contact information.
- ◆ **Take Time to Edit.** Consider your social network photos and posts. Employers routinely search candidates on social media. Does your site give a positive impression about you?
- ◆ **Get Help.** There are people and resources that can help you with the search. Talk with your counselor, go to the career office, check out Job Service ND and online job sources.
- ◆ **Be Thorough.** Exhaust all possibilities when searching for the job. Some job openings are not advertised, so let people know you are looking for work.
- ◆ **Keep Trying.** When you are starting out, part-time jobs and volunteer work will help you develop skills and gain work experience. It will also provide a list of potential references for the future.

North Dakota Career and Technical Student Organization (CTSO) Leaders



DECA prepares emerging leaders and entrepreneurs for careers in marketing, finance, hospitality and management in high schools and colleges around the globe.



CTSOs put your skills to the test, and help you learn, grow and compete. Join a student organization to:

Learn more about careers

Develop leadership skills that will prepare you for college and career

Test your skills at state and national competitions

Participate in community service opportunities



FFA makes a positive difference in the lives of students by developing their potential for premier leadership, personal growth and career success through agricultural education.



FBIA brings business and education together in a positive working relationship through innovative leadership and career development programs.



SkillsUSA's mission is to empower its members to become world-class workers, leaders and responsible American citizens.



FCCLA promotes personal growth and leadership development through Family and Consumer Sciences education.



TSA fosters personal growth, leadership, and opportunities in Science, Technology, Engineering, and Mathematics (STEM).



North Dakota Department of Career & Technical Education

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