NORTH DAKOTA CAREER RESOURCE NETWORK

CAREER OUTLOOK

34th Edition • 2016-2017

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EDUCATION & CAREER PLANNING

North Dakota cte
Career and Technical Education

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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Thank you to the Career Outlook Advisory Committee and all who have contributed to the production of the 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,

Wayne Kutzer, Director
ND Department of Career and Technical Education

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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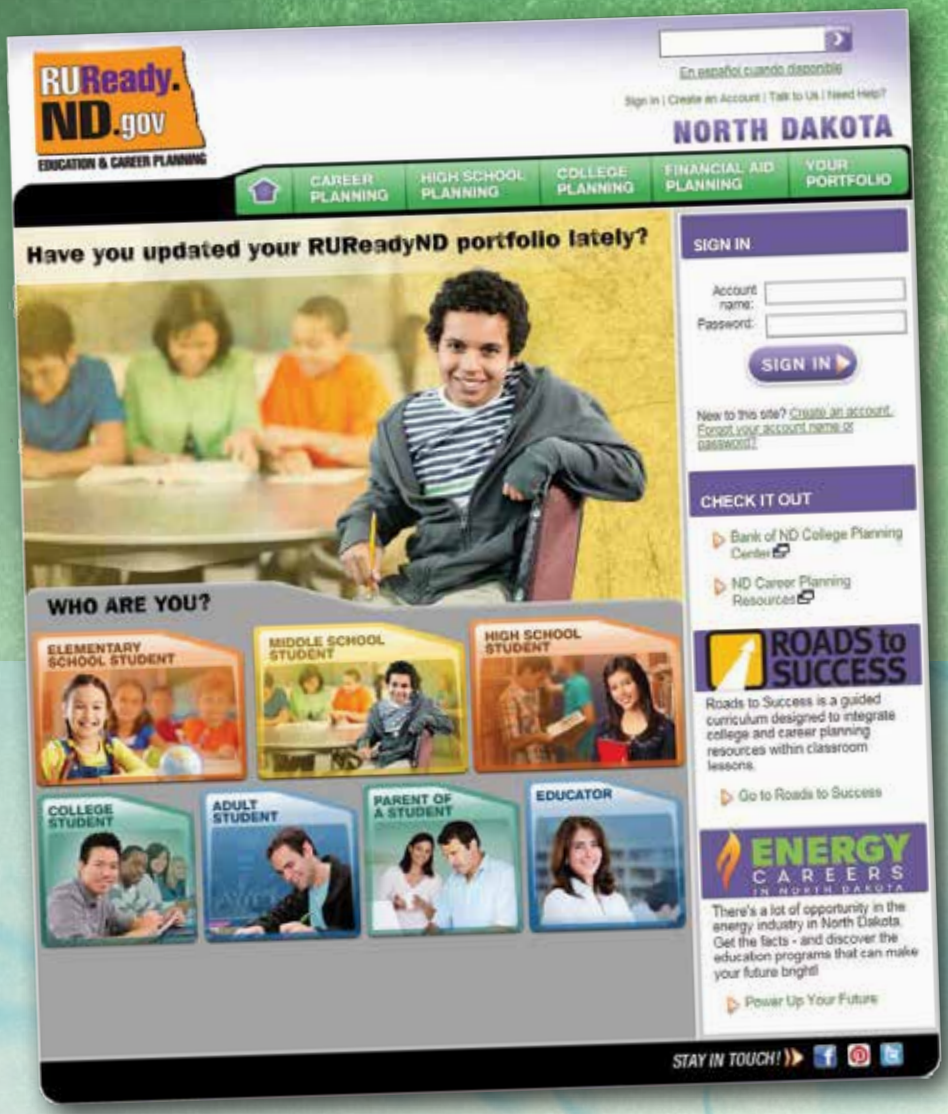
on the cover

Focus on Your Career

Plan Your Future with

RUReady.ND.gov!



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North Dakota cte Career and Technical Education

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

North Dakota Academic and Career & Technical Education Scholarship Programs

Qualified students may be eligible for up to $6,000 for undergraduate or graduate study if they satisfy the criteria for one of these scholarships.

These scholarships are to be used at North Dakota accredited public or private institutions of higher education. For purposes of eligibility, "full-time" means enrollment in at least 12 credits during the student's first two semesters of college/university attendance and enrollment in at least 15 credits during each semester thereafter. The scholarship is renewable provided the student maintains a 2.75 GPA while attending college.

North Dakota seniors must apply by the first Friday in June to establish eligibility. For **2017**, that date would be **June 2**. Students who are awarded a scholarship may defer acceptance of the scholarship.

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/TSE/grantsch/scholarship*** or call 701-328-2244.

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.

- 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.

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.

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 on a 4.0 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/careerdev/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; or a score of at least 5 on each of the three required WorkKeys assessments (Applied Mathematics, Locating Information, Reading for Information).

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 ☑ checked
1	❑ Learn how things grow and stay alive. ❑ Make the best use of the earth's natural resources. ❑ Hunt and/or fish. ❑ Protect the environment. ❑ Be outdoors in all kinds of weather. ❑ Plan, budget, and keep records. ❑ Operate machines and keep them in good repair.	❑ Self-reliant (able to do it yourself) ❑ Nature lover ❑ Physically active ❑ Planner ❑ Creative problem solver	❑ Math ❑ Life Sciences ❑ Earth Sciences ❑ Chemistry ❑ Agriculture	Total
2	❑ Read and follow instructions and/or blueprints. ❑ Picture in my mind what a finished product looks like. ❑ Work with my hands. ❑ Perform work that requires precise results. ❑ Solve technical problems. ❑ Visit and learn from beautiful, historic, or interesting buildings. ❑ Follow logical, step-by-step procedures.	❑ Curious ❑ Good at following directions ❑ Pay attention to detail ❑ Good at visualizing possibilities ❑ Patient and persistent	❑ Math ❑ Drafting ❑ Physical Sciences ❑ Construction Trades ❑ Electrical Trades ❑ Heat, Air Conditioning and Refrigeration	Total
3	❑ Use my imagination to communicate new information to others. ❑ Perform in front of others. ❑ Read and write. ❑ Play a musical instrument. ❑ Perform creative, artistic activities. ❑ Use video and recording technology. ❑ Design brochures and posters.	❑ Creative and imaginative ❑ Good communicator/good vocabulary ❑ Curious about new technology ❑ Relate well to feelings and thoughts of others ❑ Determined/tenacious	❑ Art/Graphic Design ❑ Music ❑ Speech and Drama ❑ Journalism/Literature ❑ Audiovisual Technologies	Total
4	❑ Perform routine, organized activities but can be flexible. ❑ Work with numbers and detailed information. ❑ Be the leader in a group. ❑ Make business contact with people. ❑ Work with computer programs. ❑ Create reports and communicate ideas. ❑ Plan my work and follow instructions without close supervision.	❑ Organized ❑ Practical and logical ❑ Patient ❑ Tactful ❑ Responsible	❑ Business Technology Applications ❑ Accounting ❑ Math ❑ English/Language Arts ❑ Economics	Total
5	❑ Communicate with different types of people. ❑ Help others with their homework or to learn new things. ❑ Go to school. ❑ Direct and plan activities for others. ❑ Handle several responsibilities at once. ❑ Acquire new information. ❑ Help people overcome their challenges.	❑ Friendly ❑ Decision maker ❑ Helpful ❑ Innovative/Inquisitive ❑ Good listener	❑ English/Language Arts ❑ Social Studies ❑ Math ❑ Science ❑ Psychology	Total
6	❑ Work with numbers. ❑ Work to meet a deadline. ❑ Make predictions based on existing facts. ❑ Have a clear set of rules to follow. ❑ Analyze financial information and interpret it to others. ❑ Handle money with accuracy and reliability. ❑ Take pride in the way I dress and look.	❑ Trustworthy ❑ Orderly ❑ Self-confident ❑ Logical ❑ Methodical or efficient	❑ Accounting ❑ Math ❑ Economics ❑ Banking/Financial Services ❑ Business Law	Total
7	❑ Be involved in politics. ❑ Negotiate, defend, and debate ideas and topics. ❑ Plan activities and work cooperatively with others. ❑ Work with details. ❑ Perform a variety of duties that may change often. ❑ Analyze information and interpret it to others. ❑ Travel and see things that are new to me.	❑ Good communicator ❑ Competitive ❑ Service minded ❑ Well organized ❑ Problem solver	❑ Government ❑ English/Language Arts ❑ Social Studies ❑ Math ❑ Foreign Language	Total
8	❑ Work under pressure. ❑ Help sick people and animals. ❑ Make decisions based on logic and information. ❑ Participate in health and science classes. ❑ Respond quickly and calmly in emergencies. ❑ Work as a member of a team. ❑ Follow guidelines precisely and meet strict standards of accuracy.	❑ Compassionate and caring ❑ Good at following directions ❑ Conscientious and careful ❑ Patient ❑ Good listener	❑ Biological Sciences ❑ Chemistry ❑ Math ❑ Health Sciences ❑ 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	❑ Investigate new places and activities. ❑ Work with all ages and types of people. ❑ Organize activities in which other people enjoy themselves. ❑ Have a flexible schedule. ❑ Help people make up their minds. ❑ Communicate easily, tactfully, and courteously. ❑ Learn about other cultures.	❑ Tactful ❑ Self-motivated ❑ Works well with others ❑ Outgoing ❑ Slow to anger	❑ English/Language Arts/Speech ❑ Foreign Language ❑ Social Sciences ❑ Marketing ❑ Food Services	Total
10	❑ Care about people, their needs, and their problems. ❑ Volunteer my services for the good of the community. ❑ Listen to other people's viewpoints. ❑ Help people be at their best. ❑ Work with people from preschool age to old age. ❑ Think of new ways to do things. ❑ Make friends with different kinds of people.	❑ Good communicator/good listener ❑ Caring ❑ Non-materialistic ❑ Uses intuition (instinct) and logic ❑ Non-judgmental	❑ English/Language Arts ❑ Psychology/Sociology ❑ Family and Consumer Sciences ❑ Finance ❑ Foreign Language	Total
11	❑ Work with computers. ❑ Reason clearly and logically to solve complex problems. ❑ Use machines, techniques, and processes. ❑ Read technical materials and diagrams and solve technical problems. ❑ Adapt to change. ❑ Play video games and figure out how they work. ❑ Concentrate for long periods without being distracted.	❑ Logical/analytical thinker ❑ See details in the big picture ❑ Persistent ❑ Good concentration skills ❑ Precise and accurate	❑ Math ❑ Science ❑ Computer Technology ❑ Communications ❑ Graphic Design	Total
12	❑ Work under pressure or in the face of danger. ❑ Make decisions based on my own observations. ❑ Interact with other people. ❑ Be in positions of authority. ❑ Respect rules and regulations. ❑ Debate and win arguments. ❑ Observe and analyze people's behavior.	❑ Adventurous ❑ Dependable ❑ Community-minded ❑ Decisive ❑ Optimistic	❑ English/Language Arts ❑ Psychology/Sociology ❑ Social Studies ❑ Law Enforcement ❑ First Aid/First Responder	Total
13	❑ Work with hands and learn that way. ❑ Put things together. ❑ Do routine, organized and accurate work. ❑ Perform activities that produce real, concrete results. ❑ Apply math to work out solutions. ❑ Use hand and power tools and operate equipment machinery. ❑ Visualize objects in three dimensions from flat drawings.	❑ Practical ❑ Observant ❑ Physically active ❑ Step-by-step thinker ❑ Coordinated	❑ Math-Geometry ❑ Chemistry ❑ Trade and Industry Courses ❑ Physics ❑ English/Language Arts	Total
14	❑ Shop and go to the mall. ❑ Be in charge. ❑ Make displays and promote ideas. ❑ Give presentations and enjoy public speaking. ❑ Persuade people to buy products or to participate in activities. ❑ Communicate my ideas to other people. ❑ Take advantage of opportunities to make extra money.	❑ Enthusiastic ❑ Competitive ❑ Creative ❑ Self-motivated ❑ Persuasive	❑ English/Language Arts ❑ Math ❑ Business Education/ Marketing ❑ Economics ❑ Computer Applications	Total
15	❑ Interpret formulas. ❑ Find the answers to questions. ❑ Work in a laboratory. ❑ Figure out how things work and investigate new things. ❑ Explore new technology. ❑ Experiment to find the best way to do something. ❑ Pay attention to details and be precise.	❑ Detail oriented ❑ Inquisitive ❑ Objective ❑ Methodical ❑ Mechanically inclined	❑ Drafting/Computer-Aided Drafting ❑ Math ❑ Science ❑ Electronics/Computer Networking ❑ Technology Education	Total
16	❑ Travel. ❑ See well and have quick reflexes. ❑ Solve mechanical problems. ❑ Design efficient processes. ❑ Anticipate needs and prepare to meet them. ❑ Drive or ride. ❑ Move things from one place to another.	❑ Realistic ❑ Mechanical ❑ Coordinated ❑ Observant ❑ Planner	❑ Math ❑ Trade and Industry Courses ❑ Physical Sciences ❑ Economics ❑ 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. 16	
2	Architecture & Construction	P. 19	
3	Arts, A/V Technology & Communications	P. 21	
4	Business Management & Administration	P. 23	
5	Education & Training	P. 26	
6	Finance	P. 28	
7	Government & Public Administration	P. 30	
8	Health Science	P. 31	
9	Hospitality & Tourism	P. 34	
10	Human Services	P. 36	
11	Information Technology	P. 38	
12	Law, Public Safety, Corrections & Security	P. 40	
13	Manufacturing	P. 42	
14	Marketing	P. 44	
15	Science, Technology, Engineering & Mathematics	P. 46	
16	Transportation, Distribution & Logistics	P. 48	

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 RUReady.ND.gov

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, & Other Agricultural Mgrs.**	4,250	$74,970	Run establishments that produce crops, livestock, & dairy products.
	2	**Office Clerks, General**	3,008	$26,940	Perform office tasks, including answering telephones, word processing, copying documents, & maintaining records.
	3	**Bookkeeping, Accounting, & Auditing Clerks**	2,216	$37,910	Produce financial records for organizations including transactions, statements, & checking records for accuracy.
	4	**Customer Service Representatives**	2,006	$33,480	Handle customer complaints, process orders, & provide information about products & services.
	5	**Sales Rep., Wholesale & Mfg, Exc. Tech. Products**	1,661	$68,670	Sell goods to businesses or groups of individuals. Work requires substantial knowledge of items sold.
	6	**Childcare Workers**	1,647	$20,550	Care for children's basic needs, such as bathing & feeding, when family members are unavailable.
	7	**Service Unit Operators, Oil, Gas, & Mining**	1,450	$54,790	Operate equipment to increase oil flow from producing wells or to remove obstructions from wells.
	8	**First-Line Supervisors of Retail Sales Workers**	1,399	$44,970	Duties may include management functions, such as purchasing, budgeting, accounting, & personnel work.
	9	**Carpenters**	1,341	$39,850	Construct & repair building structures—such as partitions, rafters, siding, & drywall.
	10	**Supervisors, Food Preparation & Serving Workers**	1,332	$33,520	Directly supervise & coordinate activities of workers engaged in preparing & serving food.
	11	**Teacher Assistants**	1,312	$30,220	Work under a teacher's supervision to give students additional attention & instruction.
	12	**Secretaries, Except Legal, Medical, & Executive**	1,269	$36,400	Perform clerical functions such as correspondence, appointments, & organizing files.
	13	**Electricians**	1,175	$59,410	Install & maintain electrical power, communications, lighting, & control systems in homes & factories.
	14	**Receptionists & Information Clerks**	1,174	$27,300	Provide information to the general public & customers regarding activities conducted at establishment.
	15	**Tellers**	1,166	$28,220	Responsible for accurately processing routine transactions at a bank, including cashing checks & depositing money.
Postsecondary Non-Degree Award	1	**Heavy & Tractor-Trailer Truck Drivers**	2,943	$53,400	Transport goods from one location to another. Most tractor-trailer drivers are long-haul drivers.
	2	**Nursing Assistants**	2,452	$29,520	Provide basic care for patients in hospitals & residents of long-term care facilities such as nursing homes.
	3	**Licensed Practical & Licensed Vocational Nurses**	1,499	$41,250	Observe patients, chart & report changes in patients' conditions.
	4	**Welders, Cutters, Solderers, & Brazers**	1,257	$53,100	Weld & solder components, dismantle metal assemblies, & analyze blueprints.
	5	**Automotive Service Technicians & Mechanics**	933	$42,570	Examine vehicles, compile estimates of repair costs, & secure approval to perform repairs.
	6	**Hairdressers, Hairstylists, & Cosmetologists**	623	$29,650	Determine & recommend beauty treatment, suggest hair styles, & cut hair.
	7	**Bus & Truck Mechanics & Diesel Engine Spec.**	555	$51,620	Perform routine maintenance such as lubricating equipment & machinery.
	8	**Emergency Medical Technicians & Paramedics**	375	$31,330	Administer first-aid treatment & life-support care to persons in a pre-hospital setting.
	9	**Heating, Air Cond., Refrigeration Mechanics**	351	$50,480	Reassemble & test equipment following repairs.
	10	**Medical Records & Health Info. Technicians**	351	$38,550	Protect the security of medical records to ensure that confidentiality is maintained.
Associates Degree	1	**Registered Nurses**	3,134	$58,890	Monitor all aspects of patient care, modify treatment, & consult with healthcare team.
	2	**Computer User Support Specialists**	780	$46,820	Answer user inquiries regarding computer software or hardware to resolve problems.
	3	**Dental Hygienists**	340	$64,510	Clean teeth, examine gums, develop x-ray film & watch for signs of decay or gum disease.
	4	**Preschool Teachers, Except Special Education**	227	$37,960	Educate & care for children, ages 3 to 5, in a way that young children can understand.
	5	**Medical & Clinical Laboratory Technicians**	216	$41,730	Perform medical research, including chemical analysis, to further control & cure disease.
	6	**Radiologic Technologists**	201	$49,990	Operate x-ray equipment, process radiographs, review & evaluate x-ray images.
	7	**Mechanical Engineering Technicians**	154	$56,630	Modify, develop, test, or calibrate machinery & equipment under direction of engineers.
	8	**Paralegals & Legal Assistants**	150	$43,740	Prepare legal documents, including briefs, pleadings, appeals, wills, & contracts.
	9	**Civil Engineering Technicians**	140	$50,720	Calculate dimensions, profile & component specifications, & material quantities.
	10	**Respiratory Therapists**	136	$50,960	Set up & operate devices such as mechanical ventilators for specified treatment.

		Typical Entry Level Education & Career	Total Openings	Average 2015 Wage	Examples of Tasks Performed
Bachelor's Degree	1	**General & Operations Managers**	2,239	$104,550	Oversee activities directly related to making products or providing services.
	2	**Elementary Teachers, Except Special Education**	2,006	$47,110	Instruct elementary students individually & in groups using various teaching methods.
	3	**Accountants & Auditors**	1,854	$56,000	Prepare, examine, or analyze accounting records, financial statements, or financial reports.
	4	**Secondary Teachers, Except Special & Career Education**	1,008	$48,410	Instruct students through lectures, discussions, & demonstrations in one or more subjects.
	5	**Chief Executives**	677	$158,580	Direct an organization to fund operations, maximize investments, & increase efficiency.
	6	**Civil Engineers**	534	$74,260	Analyze reports, maps, blueprints, & other topographical or geologic data to plan projects.
	7	**Industrial Engineers**	443	$77,330	Analyze statistical data & establish quality & reliability objectives of finished product.
	8	**Petroleum Engineers**	442	$125,040	Devise methods to improve oil & gas extraction, & determine the need for new or modified tool designs.
	9	**Financial Managers**	428	$110,890	Process loans, prepare financial statements, & coordinate financial planning.
	10	**Graduate Teaching Assistants**	410	$39,660	Assist faculty in postsecondary institutions by teaching lower level courses.
	11	**Market Research Analysts & Marketing Specialists**	409	$55,310	Study market conditions to help companies understand what products people want, who will buy them, & at what price.
	12	**Software Developers, Applications**	363	$72,720	Develop, create, & modify general computer applications software. Analyze user needs & develop software solutions.
	13	**Loan Officers**	354	$70,220	Evaluate, authorize, or recommend approval of commercial, real estate, or credit loans.
	14	**Medical & Health Services Managers**	354	$91,540	Direct, supervise, & evaluate work activities of medical, technical, & service personnel.
	15	**Sales Managers**	345	$106,870	Monitor customer preferences, determine price schedules, & resolve complaints.
Master's, Doctoral, or Professional Degree	1	**Lawyers**	384	$101,840	Advise clients, prosecute or defend lawsuits, legal rights, & obligations.
	2	**Pharmacists**	328	$112,110	Review prescriptions for accuracy, ascertain ingredients, & evaluate their suitability.
	3	**Physical Therapists**	289	$73,310	Prepare & carry out individually designed programs of physical treatment for patients.
	4	**Nurse Practitioners**	255	$92,750	Diagnose & treat illness, independently or as part of a healthcare team. May order lab work & x-rays.
	5	**Educational, School, & Vocational Counselors**	231	$55,250	Counsel individuals & provide group educational & vocational guidance services.
	6	**Family & General Practitioners**	226	$191,930	Diagnose, treat, & help prevent diseases & injuries that commonly occur in the general population.
	7	**Clergy**	217	$52,270	Conduct religious worship & perform other functions associated with beliefs & practices of religious faith or denomination.
	8	**Education Administrators, Elementary & Secondary**	193	$85,740	Review, modify or approve new programs, & submit program proposals to school board.
	9	**Healthcare Social Workers**	173	$47,920	Provide psychosocial support needed to cope with chronic, acute, or terminal illnesses.
	10	**Speech-Language Pathologists**	169	$65,040	Assess, diagnose, treat, & help to prevent communication & swallowing disorders in patients.
	11	**Occupational Therapists**	168	$65,110	Occupational therapists treat injured, ill, or disabled patients through the therapeutic use of everyday activities.
	12	**Physicians/Surgeons**	164	$219,560	Physicians who treat diseases, injuries, & deformities by surgical methods.
	13	**Physician Assistants**	148	$111,940	Practice medicine on a team under the supervision of physicians & surgeons.
	14	**Librarians**	143	$46,730	Help people find information & conduct research for personal & professional use.
	15	**Nurse Anesthetists**	122	$178,720	Administer anesthesia, monitor patient's vital signs, & oversee patient recovery from anesthesia.

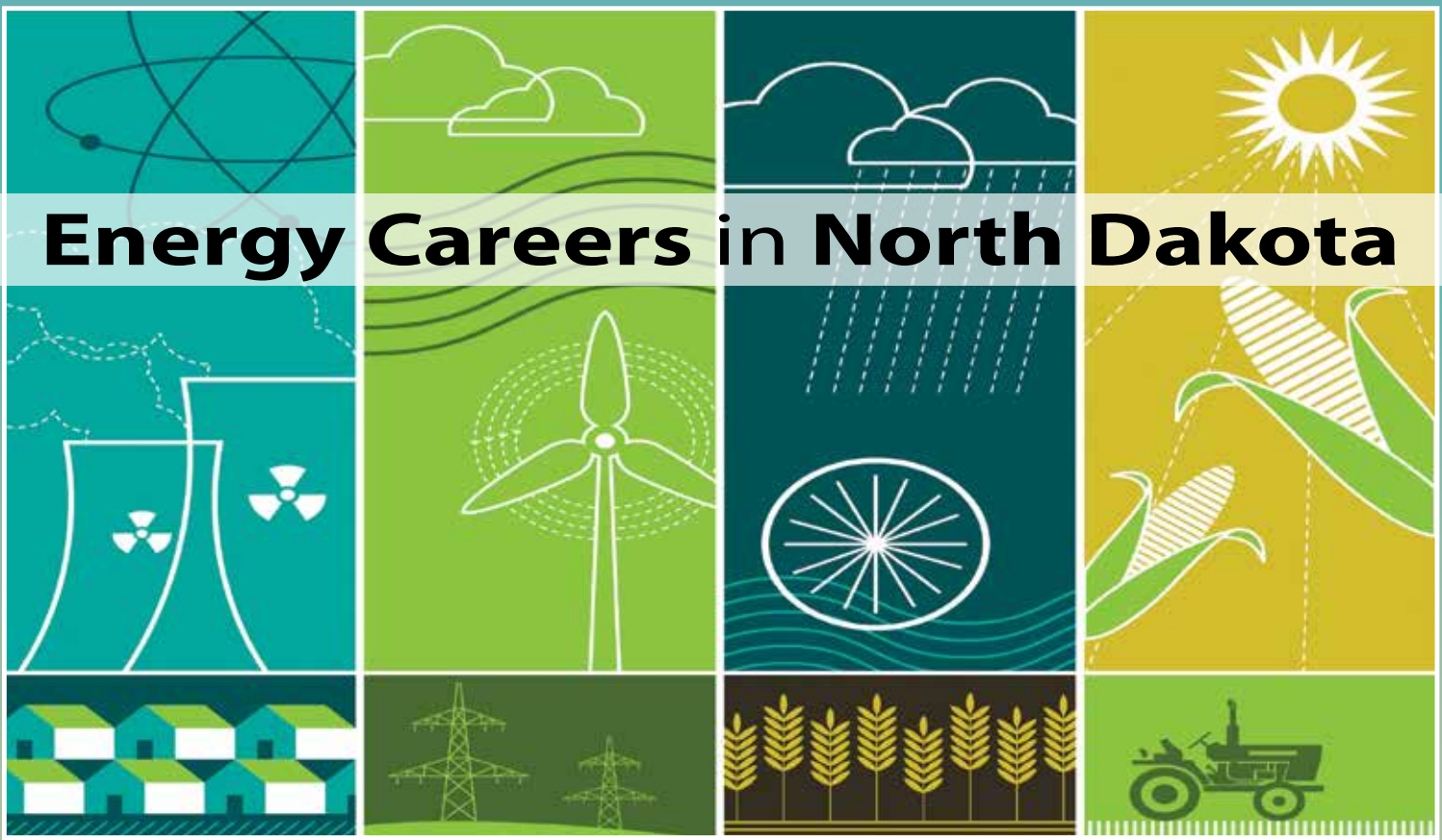
METHODOLOGY: These careers were selected based on the projected growth and replacement openings published in Job Service North Dakota's 2012-2022 Long-Term Employment Projections report. The skills and tasks are based on O*NET 15 data.

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: 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 information was taken from Job Service North Dakota's 2015 Employment and Wages by Occupation report. Wage data excludes overtime pay, bonuses, and earnings from self-employed workers.

Energy Careers in North Dakota



What energy industries are in North Dakota?

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

Is training available for energy industry jobs?

Most 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**.

Where can I find the information on employment?

The colleges and universities may have information on jobs that are open. Students may be employed by the energy industry while still enrolled in college.

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

Look for the E in the Occupational Section, pages 14-49 for energy occupations in North Dakota.

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

The Career Outlook magazine is designed to provide career exploration and planning information. This edition includes articles featuring the career paths of seven individuals. Each person currently works within a specific career cluster and pathway. However, transitioning to a different pathway or cluster is an option for each of them based on their education, skill level and interests.

How many options does your career plan have?

Brooke Renner

Agriculture, Food & Natural Resources Career Cluster, Power, Structure & Technical Systems Pathway, Page 17

Rachel Haskins Allerdings

Hospitality & Tourism Career Cluster, Restaurant & Food/Beverage Services Pathway, Page 35

Molly Sullivan Herrington

Business Management & Administration Career Cluster, General Management Pathway, Page 24

Chris Rummel

Science, Technology, Engineering & Mathematics Career Cluster, Engineering & Technology Pathway, Page 47

Christine Fannik

Education & Training Career Cluster, Teaching/Training Pathway, Page 27

Austin Olin

Transportation, Distribution & Logistics Career Cluster, Facility & Mobile Equipment Maintenance Pathway, Page 48

The Entrepreneurship article on page 12 features

Austin Morris – Enclave Development

Marketing, Sales & Service, Professional Sales and Marketing Pathway

AUSTIN MORRIS,
Fargo South High School

CLUSTER: Marketing, Sales & Service
PATHWAY: Professional Sales & Marketing

Q: In what way has DECA been a factor in your success?

A: DECA provided me a foundation to explore many different industries and actively learn a variety of real world subjects typically not taught in an educational setting. My involvement was integral in helping me decide what I wanted to do for a career and which educational path might be the best for me.

Q: What experiences have shaped your career path up to the present?

A: After graduating from Fargo South High School, I enrolled in the Economics program at Moorhead State University. This didn't seem to fit what I really wanted to do, so I transferred to NDSU, earning a Bachelor's degree in Management Communications with minors in Advertising/ Public Relations and Business Administration. I had internships with both Goldmark Schlossman and INREIT Real Estate Trust while in college, and continued working with them after college graduation. While at INREIT, I had hands-on training in the real estate investment business and learned a tremendous amount from a terrific mentor.

Q: Enclave Development was started five years ago by you and a business partner. Tell us about the company and the success you've had.

A: Enclave Development seeks to be the most exciting, forward-thinking, entrepreneurial real estate development firm in the Midwest. We strive to create the finest places where people yearn to live, work and play.

To date, we've developed over $150,000,000 of real estate in North Dakota and Minnesota. We have 50 employees and a positive culture that keeps our staff motivated and happy. All of our staff are team players that collaborate and bounce options back and forth every day. Each person brings something different to the table, so our team approach helps us to make the most efficient, effective, aesthetic, and functional decisions on each project.

ENTREPRENEURSHIP

Enclave Development
Fargo, North Dakota

Q: What elements of your job are important to you?

A: I love to carefully locate and analyze potential development deals. My passion is to create places where people want to live, work, and play. It's exhilarating to locate a piece of land, a redevelopment opportunity, or an underutilized property and design a project that fits a market need and can produce a favorable return for our investors.

There is a lot of variety in my workload – many different projects, markets, and employees. There is a constant balancing act that requires flexibility, adaptability, hard work, and a sense of calm.

Q: Is there anything specific that has been helpful to you in your career development?

A: I have read a wide variety of books, including some on psychology, leadership, marketing, and business. If I learn one major thing from a book, then it is worth my time.

Q: Is there anything else you would like to add?

A: Have an open mind and absorb knowledge and expertise from those more experienced than you. During an early internship, (prior to my real estate experiences), I was told that I "needed" to change or I wouldn't be successful. I hated hearing it, and didn't agree with a lot of what was said, but I still took the comments and reflected heavily on them. That particular company valued something very different from what I valued – neither of us was wrong, just different. In the end, this experience was incredible because it taught me to choose an employer that would value my work, brain, curiosity, creativity, attitude, work ethic, and expertise over anything else. The "difficult" feedback was just as important as the more successful experiences I had.

NORTH DAKOTA DECA

Is entrepreneurship for you? Take the quiz on page 58.

How to Use THE OCCUPATIONAL SECTION

Occupational Title/Description 1	Holland Code 2 / Related Occupations 3	National 4	5 ND Outlook 2012-2022			ND Earnings Outlook 6	
		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; and assist with animal breeding and nutrition. 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	83	31	Below Avg Growth	$29,820 $40,620	
Agriculture Equipment Operators Drive and control farm equipment to till soil and to plant, cultivate, and harvest crops. May perform tasks such as crop baling or harvesting.	Realistic Combine Operator; Hay Baler	59,000	1,449	567	Below Avg Growth	$28,210 $36,030	

(Example)

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 2012-2022

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: 25.6% or more per year
High Growth: 16.0-25.5% per year
Average to Near Average Growth: 9.7-15.9% per year
Below Average Growth: 0.1-9.6% 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 $47,779.
- 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 6 and 7 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
1	Agriculture, Food & Natural Resources	P. 16	9	Hospitality & Tourism	P. 34
2	Architecture & Construction	P. 19	10	Human Services	P. 36
3	Arts, A/V Technology & Communications	P. 21	11	Information Technology	P. 38
4	Business Management & Administration	P. 23	12	Law, Public Safety, Corrections & Security	P. 40
5	Education & Training	P. 26	13	Manufacturing	P. 42
6	Finance	P. 28	14	Marketing	P. 44
7	Government & Public Administration	P. 30	15	Science, Technology, Engineering & Mathematics	P. 46
8	Health Science	P. 31	16	Transportation, Distribution & Logistics	P. 48

The occupation information in this section is taken from the 2012-2022 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 2015 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.

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CareerClusters®
PATHWAYS TO COLLEGE & CAREER READINESS
Agriculture, Food & Natural Resources

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.

Occupational Title/Description	Holland Code Related Occupations	National Number Employed	ND Outlook 2012-2022 Number Employed	Total Openings	Long-Term Growth Outlook	ND Earnings 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; and assist with animal breeding and nutrition. 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	83	31	Below Avg Growth	$29,820 $40,620	
Agriculture Equipment Operators Drive and control farm equipment to till soil and to plant, cultivate, and harvest crops. May perform tasks such as crop baling or harvesting.	Realistic Combine Operator; Hay Baler	59,000	1,449	567	Below Avg Growth	$28,210 $36,030	
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, under the direction of engineering staff or scientist. May assist in the development of environmental remediation devices.	Realistic Air Analysis Engineering Technician; Pollution Control Engineering Technician	18,600	47	19	High Growth	$46,370 $63,720	
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. May collect samples of gases, soil, water, and other materials for testing.	Investigative Groundwater Monitoring Technician; Pollution Control Technician	36,200	160	120	Exceptional	$35,830 $50,890	
Excavating, Loading Machine and Dragline Operators Operate or tend machinery equipped with scoops, shovels, or buckets, to excavate and load loose materials.	Realistic Backhoe Operator; Shovel Operator	50,700	680	182	High Growth	$38,450 $54,930	
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 Combine Mechanic; Irrigation Equipment Mechanic	35,800	835	424	High Growth	$38,700 $48,100	
Farm Products Buyers and Purchasing Agents Purchase farm products either for further processing or resale. Includes tree farm contractors, grain brokers and market operators, grain buyers, and tobacco buyers.	Enterprising Cotton Broker; Livestock Buyer	14,200	159	49	Avg to Near Avg Growth	$34,970 $62,770	
Farmers and Ranchers Plan, direct, or coordinate the management or operation of farms, ranches, greenhouses, aquacultural operations, nurseries, timber tracts, or other agricultural establishments. May hire, train, and supervise farm workers to carry out the day-to-day activities of the managed operation. May engage in or supervise planting, cultivating, harvesting, and financial and marketing activities.	Enterprising Animal Husbandry Manager; Dairy Farm Manager; Fish Hatchery Manager	930,600	26,338	4,638	Below Avg Growth	$67,420 $74,970	
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 Conservation Enforcement Officer; Wildlife Officer	6,600	56	21	Below Avg Growth	$52,840 $67,760	
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 Oil Well Cable Tool Operator	26,000	1,243	502	Zero to Declining Growth	$43,580 $65,140	
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 Well Servicing Rig Operator	59,300	3,587	1,450	Zero to Declining Growth	$36,260 $54,790	
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 Grain Sampler; Milk Tester	17,000	163	76	High Growth	$26,650 $35,860	
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	1,122	327	Avg to Near Avg Growth	$37,390 $59,000	
Conservation Scientists Manage, improve, and protect natural resources to maximize their use without damaging the environment. May conduct soil surveys and develop plans to eliminate soil erosion. May instruct in best ways to use crop rotation, contour plowing, or terracing to conserve soil and water.	Investigative Range Ecologist; Soil Conservationist	22,100	220	64	Zero to Declining Growth	$46,210 $64,520	

AGRICULTURE, FOOD & NATURAL RESOURCES

Occupational Title/Description	Holland Code Related Occupations	National Number Employed	ND Outlook 2012-2022 Number Employed	Total Openings	Long-Term Growth Outlook	ND Earnings Outlook Annual Entry-Level Wages Annual Average Wages	Occupational Trait(s)
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	57	20	Avg to Near Avg Growth	$54,510 $78,710	High Skill, High Wage, Military
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, feed and farm management advisors, home economists, and extension service advisors.	Social Agricultural Extension Educator; Feed Management Advisor	13,700	157	25	Below Avg Growth	$42,300 $58,070	High Skill, High Wage
Food Scientists and Technologists Use chemistry, microbiology, engineering, and other sciences to study the principles underlying the processing and deterioration of foods; analyze food content to determine levels of vitamins, fat, sugar, and protein; research ways to make processed foods safe, palatable, and healthful; and apply food science knowledge to determine best ways to process, package, preserve, store, and distribute food.	Investigative Dairy Bacteriologist; Food Safety Scientist	19,400	126	46	Below Avg Growth	$33,240 $45,640	High Skill
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. May devise plans for planting and growing new trees, monitor trees for healthy growth, and determine optimal harvesting schedules.	Realistic Forest Ecologist; Timber Management Specialist	12,000	20	7	Below Avg Growth	$39,380 $52,230	High Skill, High Wage

Energy Occupation | Bright Outlook | High Skill | High Wage | Military

BROOKE RENNER
Beulah High School

Cluster: *Agriculture, Food & Natural Resources*
Pathway: *Power, Structure & Technical Systems*

Brooke Renner's early experiences on the family farm significantly influenced her planning beyond high school. Her Dad let her "help" work on the equipment and get it ready for field work. While she may have slowed down the progress of repairs, she learned a lot about machines and how they work. Brooke is grateful for her Dad's patience and the FFA experiences that clarified her college and career planning.

Brooke's biggest FFA achievements were in the Agriculture Mechanics (Ag Mech) contests. She entered the Advanced Ag Mech events in 11th grade. After earning top honors at the state level, Brooke and the rest of the team members competed at national convention. Brooke placed 4th overall individually, and the team placed 2nd. She also won top individual honors in the Machinery and Equipment Division.

FFA gave Brooke the opportunity to develop the skills required to repair and maintain equipment. Determination and commitment are valuable life skills that she developed through FFA involvement. She credits those life skills with helping her be a strong competitor and being a better employee today.

After graduating from Beulah High School, Brooke enrolled at North Dakota State University to study Mechanical Engineering. However, the program was not a good fit for her and she transferred to North Dakota State College of Science. She majored in the General Diesel and Business Technology Management Programs. She completed the Diesel internship at Coteau Mines near Beulah. Working as a Diesel Technician was a good career, but the shift schedule was not enjoyable for her. She decided to look for a day job that used her knowledge of both the Diesel and Business degrees.

Brooke is currently working as a Parts Associate at Butler Machinery in Dickinson. A typical day includes determining what parts need to be shuttled, phone calls to other stores and determining how much space is available on the shuttle. The night shuttle leaves Bismarck at 6:00 p.m., travels to Dickinson, then meets the Rapid City Shuttle in Bowman to switch trucks. This allows the company to get parts from Rapid City and Bismarck within 12 hours. If necessary, the shuttle also delivers parts in various towns along the way so customers do not have to drive a long distance. Brooke is responsible for making sure everything gets on the shuttle and the route runs smoothly. She also pulls customer orders, returns parts and puts away stock, checks the status of backorders, and receives or ships out orders as needed. After all the work is completed with the parts inventory, she works with other employees to clean the warehouse and prepare the store for closing.

Customer service is the most important aspect of Brooke's job. She understands the importance of keeping the customers happy and willing to continue doing business with the Butler Machinery company. Some of the challenges she faces include working with difficult customers and incomplete or inaccurate information from the manufacturers.

When asked about her definition of college and career readiness, Brooke said, "You need to have a basic education with the necessary skills that will lead to success in the real world. It is important to have a strong foundation in a variety of topics because opportunities may come your way that lead to a future career path. Do not be afraid to make mistakes, and learn from each mistake you make. You need to enjoy what you are doing."

AGRICULTURE, FOOD & NATURAL RESOURCES

Occupational Title/Description	Holland Code Related Occupations	National Number Employed	ND Outlook 2012-2022 Number Employed	Total Openings	Long-Term Growth Outlook	ND Earnings Outlook Annual Entry-Level Wages Annual Average Wages	Occupational Trait(s)
Postsecondary Programs – Bachelor's Degree or Higher							
Natural Science Managers Plan, direct, or coordinate activities in such fields as life sciences, physical sciences, mathematics, statistics, and research and development in these fields.	Enterprising Geophysical Manager; Ocean Program Administrator	51,600	151	31	Zero to Declining Growth	$74,750 $94,620	
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. May be employed in the public or private sector.	Investigative Environmental Health Sanitarian; Health and Safety Inspector; Industrial Hygienist	70,300	314	110	Below Avg Growth	$59,360 $82,540	
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	70,300	195	90	Avg to Near Avg Growth	$56,380 $85,310	

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	Agriculture (BSC, DCB, NDSCS) Agricultural Sales and Service (DSU) Agriculture transfer (BSC, DCB, NDSCS, WSC) Farm/Ranch Management (BSC, DSU, NDSCS) Precision Agriculture (LRSC)	Agribusiness (NDSU, VCSU) 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) International Agribusiness (NDSU)
Animal Systems	Animal Science (NDSCS) Pre-Veterinary Medicine transfer (BSC, DCB,TMCC) Wildlife Management (DCB, NDSCS, TMCC)	Animal Science (NDSU) Equine Science (NDSU) Fisheries and Wildlife Science (UND, VCSU) Vet Technology (NDSU)	Animal Science (NDSU)
Environmental Service Systems	Energy Technician (SBC) Environmental Science/Technology (CCCC, DCB, NHSC, SBC, TMCC, UTTC) Water & Wastewater Treatment (BSC)	Energy Management (BSC) Environmental Design (NDSU) Environmental Science (DSU, NHSC, SBC)	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)	Natural Resources Management (NDSU)	Natural Resources Management (NDSU) Sustainable Energy Engineering (UND)
Plant Systems	Agriculture Industry and Technology-Agronomy (BSC) Crop Production Sales & Technology (NDSCS) Forestry (DCB) Horticulture (DCB) Sustainable Vegetable Production (DCB)	Botany (NDSU) Crop and Weed Sciences (NDSU) Horticulture (NDSU) Range Science (NDSU) Soil Science (NDSU) Sports and Urban Turfgrass Management (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, Gen. Diesel, Komatsu (NDSCS) John Deere Tech (NDSCS) Nuclear Power Technology (BSC) Oil Drilling/Operations (NHSC, SBC, TMCC) Petroleum Engineering Technology (BSC) Petroleum Production Technology (BSC, WSC) Power Plant Technology (BSC) Process Plant Technology (BSC, TMCC) Renewable Generation Technology (BSC) 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	**WSC**	Williston State College	www.willistonstate.edu

ARCHITECTURE & CONSTRUCTION

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

CareerClusters® PATHWAYS TO COLLEGE & CAREER READINESS
Architecture & Construction

Occupational Title/Description	Holland Code Related Occupations	National Number Employed	ND Outlook 2012-2022 Number Employed	Total Openings	Long-Term Growth Outlook	ND Earnings 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. Use knowledge of building materials, engineering practices, and mathematics to complete drawings.	Artistic Building Drafter; Civil Computer-Aided Design Technician	87,900	257	73	Avg to Near Avg Growth	$37,320 $48,540	
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 batt or roll insulation.	Realistic Building Carpenter; Wood Stair Builder; Wood Floor Layer	901,200	4,158	1,341	High Growth	$31,010 $39,850	
Cement Masons and Concrete Finishers Smooth and finish surfaces of poured concrete, such as floors, walks, 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 Cement Patcher; Concrete Floor Installer;Pool Installer	140,800	1,383	475	High Growth	$32,780 $39,770	
Construction Equipment Operators (Operating Engineers) Operate one or several types of power construction equipment, such as motor graders, bulldozers, scrapers, compressors, pumps, derricks, shovels, tractors, or front-end loaders to excavate, move, and grade earth, erect structures, or pour concrete or other hard surface pavement. May repair and maintain equipment in addition to other duties.	Realistic Bulldozer Operator; Steam Shovel Operator	351,200	3,075	911	Below Avg Growth	$40,900 $54,850	
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 Powerline Examiner; Electrical High Tension Tester	114,500	1,013	513	Avg to Near Avg Growth	$47,700 $64,970	
Electricians Install, maintain and repair electrical wiring, equipment and fixtures. Ensure that work is in accordance with relevant codes.	Realistic Solar Photovoltaic Electrician	583,500	2,864	1,175	High Growth	$39,470 $59,410	
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 Plumbers, Sheet Metal Workers	267,600	730	351	High Growth	$35,560 $50,480	
Landscaping and Groundskeeping Workers Landscape or maintain grounds of property using hand or power tools or equipment. Workers typically perform a variety of tasks, which may include any combination of the following: sod laying, mowing, trimming, planting, watering, fertilizing, digging, raking, and sprinkler installation.	Realistic Greenskeeper; Hedge Trimmer	1,137,800	2,520	997	Avg to Near Avg Growth	$20,430 $27,650	
Maintenance and Repair Workers, General Perform work involving the skills of two or more maintenance occupations to keep machines, mechanical equipment, or the structure of an establishment in repair. Duties may involve pipe fitting; boiler making; insulating; welding; carpentry; repairing equipment; installing equipment; and repairing buildings, floors, or stairs.	Realistic Building Maintenance Mechanic	1,325,100	2,984	980	Avg to Near Avg Growth	$28,550 $41,170	
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 Fire Sprinkler Installer; Sprinkler Fitter	386,900	1,371	442	High Growth	$35,300 $51,610	
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 Bridge Ironworker; Precast Concrete Ironworker	58,100	372	178	Avg to Near Avg Growth	$37,700 $53,940	
Supervisors of Construction Trades Workers Directly supervise and coordinate activities of construction or extraction workers.	Enterprising Quarry Boss; Rig Supervisor	545,500	4,047	906	Avg to Near Avg Growth	$49,000 $76,840	
Surveying and Mapping Technicians Perform surveying and mapping duties, usually under the direction of an engineer or surveyor to obtain data used for construction, mapmaking, boundary location, mining, or other purposes. May calculate mapmaking information and create maps from source data, such as surveying notes, aerial photography, satellite data, or other maps to show topographical features, political boundaries, and other features. May verify accuracy and completeness of maps.	Realistic Field Map Technician; GIS Mapping Technician	54,000	187	91	Exceptional	$34,030 $46,670	
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 Wind Energy Technician	3,200	88	42	Exceptional	$50,380 $59,870	

ARCHITECTURE & CONSTRUCTION

Occupational Title/Description	Holland Code Related Occupations	National Number Employed	ND Outlook 2012-2022 Number Employed	Total Openings	Long-Term Growth Outlook	ND Earnings 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 Architectural Designer; Structural Architect	197,400	191	98	Exceptional	$45,440 $66,530	
Architectural and Engineering Managers Plan, direct, or coordinate activities in such fields as architecture and engineering or research and development in these fields.	Enterprising Engineering Design Manager; Mechanical Engineering Director	182,000	393	243	Exceptional	$89,090 $125,420	
Civil Engineers Perform engineering duties in planning, designing, and overseeing construction and maintenance of building structures, and facilities, such as roads, railroads, airports, bridges, harbors, channels, dams, irrigation projects, pipelines, power plants, and water and sewage systems. Includes architectural, structural, traffic, ocean, and geotechnical engineers.	Realistic Bridge Engineer; Highway Engineer	272,900	931	534	Exceptional	$50,800 $74,260	
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 Construction Superintendent; General Contractor	485,000	1,089	294	Avg to Near Avg Growth	$57,360 $84,890	
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 Job Cost Estimator; Production Cost Estimator	202,200	588	344	Exceptional	$34,990 $57,100	
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 Land Surveyor; Mineral Surveyor	42,400	303	140	High Growth	$44,080 $63,400	

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 (SBC, 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) Sustainable Construction Technology (BSC)	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	Facilities Maintenance (BJCC) 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

ARTS, A/V TECHNOLOGY & COMMUNICATIONS

CareerClusters® PATHWAYS TO COLLEGE & CAREER READINESS
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.

Occupational Title/Description	Holland Code Related Occupations	National Number Employed	ND Outlook 2012-2022 Number Employed	Total Openings	Long-Term Growth Outlook	ND Earnings 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, or set up and operate audio and video equipment including microphones, sound speakers, video screens, projectors, video monitors, recording equipment, connecting wires and cables, sound and mixing boards, and related electronic equipment for concerts, sports events, meetings and conventions, presentations, and news conferences.	Realistic Multimedia Production Assistant; Video Control Operator	70,900	93	32	High Growth	$17,840 $37,740	High Skill, Military
Desktop Publishers Format typescript and graphic elements using computer software to produce publication-ready material.	Artistic Electronic Publisher	16,400	48	9	Zero to Declining Growth	$19,540 $31,710	High Skill
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 Home Theater Installer; Satellite Dish Installer; Wireless Internet Installer	31,300	194	76	Below Avg Growth	$27,960 $40,970	High Skill
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 Medical Photographer; Wedding Photographer	136,300	240	35	Below Avg Growth	$24,090 $35,480	Military
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 Game Show Host; Talk Show Host	41,300	327	68	Zero to Declining Growth	$20,190 $30,020	Military
Radio, Cellular, and Tower Equipment Installers and Repairers Repair, install or maintain mobile or stationary radio transmitting, broadcasting, and receiving equipment, and two-way radio communications systems used in cellular telecommunications, mobile broadband, ship-to-shore, aircraft-to-ground communications, and radio equipment in service and emergency vehicles. May test and analyze network coverage.	Realistic Radio Frequency Technician; Two-Way Radio Technician	16,400	79	24	High Growth	$39,620 $54,790	High Skill, High Wage
Telecommunications Equipment Installers and Repairers Install, set-up, rearrange, or remove switching, distribution, routing, and dialing equipment used in offices. Service or repair telephone, cable television, Internet, and other communications equipment on customers' property. May install communications equipment or communications wiring in buildings.	Realistic Fiber Optic Installer; Private Branch Exchange (PBX) Installer and Repairer	217,200	444	80	Below Avg Growth	$44,650 $63,950	High Skill, High Wage, Military
Telecommunications Line Installers and Repairers Install and repair telecommunications cable, including fiber optics.	Realistic Cable Television Installer; Fiber Optics Line Installer	134,900	355	102	Below Avg Growth	$43,580 $60,820	High Wage
Postsecondary Programs – Bachelor's Degree or Higher							
Art Directors Formulate design concepts and presentation approaches for visual communications media, such as print, broadcasting, and advertising. Direct workers engaged in art work or layout design.	Artistic Magazine Designer	74,800	84	20	Zero to Declining Growth	$30,460 $63,680	High Skill, High Wage
Camera Operators, Television, Video, and Motion Picture Operate television, video, or motion picture camera to record images or scenes for various purposes, such as TV broadcasts, advertising, video production, or motion pictures.	Realistic Cinematographer; Videographer	21,400	93	7	Zero to Declining Growth	$25,080 $36,540	High Skill
Graphic Designers Design or create graphics to meet a client's specific commercial or promotional needs, such as packaging, displays or logos.	Artistic Catalogue Illustrator	259,500	749	255	Below Avg Growth	$27,240 $37,780	Bright Outlook, High Skill, Military
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. May specialize in a particular field, style, or phase of interior design.	Artistic Home Lighting Advisor; Kitchen Designer	58,900	104	42	Avg to Near Avg Growth	$32,080 $45,150	High Skill
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 Special Effects Artist; 3D Animator	68,900	67	19	Below Avg Growth	$39,240 $52,950	High Skill, High Wage

Energy Occupation | Bright Outlook | High Skill | High Wage | Military

ARTS, A/V TECHNOLOGY & COMMUNICATIONS

Occupational Title/Description	Holland Code Related Occupations	National Number Employed	ND Outlook 2012-2022 Number Employed	Total Openings	Long-Term Growth Outlook	ND Earnings Outlook Annual Entry-Level Wages Annual Average Wages	Occupational Trait(s)
Postsecondary Programs – Bachelor's Degree or Higher							
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 interpretation of script, choice of actors or guests, set design, sound, special effects, and choreography.	Enterprising Casting Director; Independent Film Maker	122,600	145	51	Below Avg Growth	$26,700 $40,710	
Proofreaders and Copy Markers Read transcript or proof type setup to detect and mark for correction any grammatical, typographical, or compositional errors.	Conventional Braille Proofreader; Editorial Assistant	13,200	41	8	Zero to Declining Growth	$19,250 $27,410	
Writers and Authors Writers and authors develop written content for advertisements, books, magazines, movie and television scripts, songs, and online publications.	Enterprising Advertising Copy Writer; Playwright	129,100	297	77	Below Avg Growth	$30,360 $43,660	

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 transfer (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 (MaSU, MiSU, NDSU, UJ, UM, VCSU) Journalism/Professional Writing (DSU, NDSU, VCSU) Mass Communications (NDSU, UM) Writing (DSU)	Communication (NDSU) English (NDSU) Mass Communications (NDSU) Rhetoric, Writing, and Culture (NDSU) Speech Communication (NDSU)
Performing Arts	Music transfer (BSC, NDSCS, TMCC, WSC) Theatre Arts (BSC)	Music (DSU, MiSU, NDSU, UJ, UM, UND, VCSU) Music Education (DSU, MiSU, NDSU, UJ, UM, UND, VCSU) Music Performance (UND) Musical Theatre (UND) Theatre Arts (DSU, MiSU, NDSU, UJ, UND) Theatre Education (DSU, MiSU)	Music (NDSU, UND) Theatre Arts (UND)
Printing Technology		Art/Printmaking Option (MiSU)	
Telecommunications	Electronics and Telecommunications Technology (BSC)	Communication (DSU, MaSU, MiSU, UJ, UND, VCSU) Communications Education (DSU) Strategic Communication (NDSU)	
Visual Arts	Art and Art Marketing (UTTC) Art transfer (DCB, TMCC) Digital Design (VCSU) Fine Art (CCCC) Graphic Design (CCCC, RC) Graphic Design & Communications (BSC) Photography (DCB) Visual Art transfer (BSC)	Apparel, Retail Merchandising, and Design (NDSU) Art/Art Studies (DSU, MiSU, NDSU, UJ, UTTC, VCSU) Arts Administration (MiSU) Art Education (DSU, MiSU, NDSU, VCSU) Art Entrepreneurship (DSU) Fine Art (MiSU) Graphic Design (RC) Graphic Design & New Art Media (UND) Graphic Design Technology (UND) Interior Design (NDSU) Visual Arts (UND)	Art & Design 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.uttc.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.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

BUSINESS MANAGEMENT & ADMINISTRATION

CareerClusters® PATHWAYS TO COLLEGE & CAREER READINESS
Business Management & Administration

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

Occupational Title/Description	Holland Code Related Occupations	National Number Employed	ND Outlook 2012-2022 Number Employed	Total Openings	Long-Term Growth Outlook	ND Earnings 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 Advertising Account Executive; Display Sales Representative	154,600	515	168	Below Avg Growth	$20,960 $41,680	
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. May also check the accuracy of figures, calculations, and postings pertaining to business transactions recorded by other workers.	Conventional Accounts Receivable Clerk; Bookkeeper; Mortgage Accounting Clerk	1,799,800	9,281	2,218	Avg to Near Avg Growth	$27,540 $37,910	
Couriers and Messengers Pick up and deliver messages, documents, packages, and other items between offices or departments within an establishment or directly to other business concerns, traveling by foot, bicycle, motorcycle, automobile, or public conveyance.	Realistic Bicycle Messenger; Laboratory Courier; Office Runner	98,200	113	14	Zero to Declining Growth	$18,520 $25,150	
Court Reporters Use verbatim methods and equipment to capture, store, retrieve, and transcribe pretrial and trial proceedings or other information. Includes stenocaptioners who operate computerized stenographic captioning equipment to provide captions of live or prerecorded broadcasts for hearing-impaired viewers.	Conventional Court Stenographer; Court Transcriber; Deposition Reporter	20,800	74	20	Avg to Near Avg Growth	$38,630 $49,510	
Customer Service Representatives Interact with customers to provide information in response to inquiries about products and services and to handle and resolve complaints.	Enterprising Customer Complaint Clerk; Warranty Clerk	2,362,800	4,799	2,006	Avg to Near Avg Growth	$25,370 $33,480	
Insurance Claims and Policy Processing Clerks Process new insurance policies, modifications to existing policies, and claims forms. Obtain information from policyholders to verify the accuracy and completeness of information on claims forms, applications and related documents, and company records. 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	964	413	High Growth	$30,390 $38,800	
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 Law Secretary; Legal Administrative Assistant	223,100	441	55	Below Avg Growth	$31,560 $38,000	
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 Dental Secretary; Psychiatric Secretary	525,600	559	237	Exceptional	$25,040 $31,250	
Office Clerks, General Knowledge of office systems and procedures is required. Duties may be assigned in accordance with the office procedures of individual establishments and may include a combination of answering telephones, bookkeeping, typing or word processing, and office machine operation.	Conventional Administrative Clerk; Office Assistant; Real Estate Clerk	2,983,500	10,749	3,009	Below Avg Growth	$18,710 $26,940	
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 Time and Attendance Clerk	179,500	480	159	Avg to Near Avg Growth	$33,410 $40,470	
Procurement Clerks Compile information and records to draw up purchase orders for procurement of materials and services.	Conventional Purchasing Clerk	72,200	185	82	Below Avg Growth	$28,320 $98,810	
Receptionists and Information Clerks Answer inquiries and provide information to the general public, customers, visitors, and other interested parties regarding activities conducted at establishment and location of departments, offices, and employees within the organization.	Conventional Appointment Clerk; Front Desk Receptionist	1,006,000	3,006	1,174	Avg to Near Avg Growth	$19,590 $27,300	
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 Office Secretary; School Secretary	2,324,400	4,527	1,270	High Growth	$26,510 $36,400	
Supervisors of Office/Administrative Support Workers Directly supervise and coordinate the activities of clerical and administrative support workers.	Enterprising Clerical Supervisor; Payroll Supervisor	1,418,100	3,020	1,160	Avg to Near Avg Growth	$36,520 $55,420	

BUSINESS MANAGEMENT & ADMINISTRATION

Occupational Title/Description	Holland Code Related Occupations	National Number Employed	ND Outlook 2012-2022 Number Employed	Total Openings	Long-Term Growth Outlook	ND Earnings Outlook Annual Entry-Level Wages Annual Average Wages	Occupational Trait(s)
Word Processors and Typists Use word processor, computer or typewriter to type letters, reports, forms, or other material from rough draft, corrected copy, or voice recording. May perform other clerical duties as assigned.	Conventional Clerk Typist; Transcription Typist	104,400	182	7	Zero to Declining Growth	$20,990 $28,080	
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 Certified Public Accountant; Internal Auditor	1,275,400	3,801	1,855	High Growth	$37,750 $56,000	
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 Facilities Manager; Records and Information Manager	280,800	671	230	High Growth	$48,160 $80,720	
Budget Analysts Examine budget estimates for completeness, accuracy, and conformance with procedures and regulations. Analyze budgeting and accounting reports.	Conventional Budget Examiner; Cost Analyst	60,800	155	80	Avg to Near Avg Growth	$51,760 $63,670	
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 General Superintendent; Television Station Manager	1,972,700	6,428	2,240	High Growth	$60,300 $104,550	
Human Resources Specialists Perform activities in the human resource area. Includes employment specialists who screen, recruit, interview, and place workers.	Enterprising Personnel Recruiter; Staffing Coordinator	418,000	910	265	Avg to Near Avg Growth	$40,870 $56,330	

MOLLY SULLIVAN HERRINGTON

New Rockford High School

Cluster: *Business Management & Administration*
Pathway: *General Management*

Molly Herrington grew up in a goal-setting culture. When she was in kindergarten, her mom laminated a piece of neon pink tag board that was used to outline daily, weekly and monthly goals. As an adult, she realizes that her mom used the project to get Molly to do her chores. The lesson learned by Molly was the importance of being able to dream and to reach for more than you are today. She still sets weekly, monthly, and annual goals. "I may not meet every goal, but I always know where I'm aiming and that it aligns with my core values and beliefs."

The FCCLA (Family, Career and Community Leaders of America) Chapter at New Rockford High School was where Molly first embraced the concept and value of servant leadership. The time required for projects, committees, community engagement, and leadership roles at the local, district, and state levels served as a foundation to the skill sets she uses every day. While in high school, Molly was selected as a recipient of the FCCLA-Kikkoman Japanese Exchange Scholarship. Living in Japan clarified her desire to work in the international business sector and incorporate the challenges of cultural diversity into her everyday working environment.

Molly is very business-minded and pursued both profit and nonprofit internships during college. A Semester at Sea program allowed her to study the governments and cultures of 12 countries. She also participated in the Global Village where she worked with individuals from 54 countries to develop leadership and entrepreneurial skills, business and industry knowledge, and an in-depth understanding of other cultures.

The last two internships during college were the most influential. The first was Program Assistant at FCCLA headquarters in Reston, Virginia, and the second was at KLJ in Bismarck. These internships introduced Molly to the government-business relationship that is often necessary to move a company's operations forward.

After graduating from the University of Mary, Molly was hired by KLJ to work in the Government Relations division. KLJ provides multi-disciplinary engineering and planning services that result in innovative and practical solutions for local, regional and national infrastructure projects. She is currently working as the Government Relations Manager as well as overseeing KLJ's Young Professional Development Program. The program is intended to establish a long-term foundation for future successful leadership within KLJ. Each year, 15 of the brightest, young talents are welcomed into a three-year process where they grow professionally, personally, and civically.

In addition to her career at KLJ, Molly also spent several years working with the FCCLA Leadership Training Team. The Leadership Training Team develops training, leads workshops and breakout sessions, communicates with national network members and generally serves as an extension of national staff.

"Be willing to try all of the different, crazy, out-of-your comfort-zone opportunities that come your way. Each will shape you as an individual and allow you to better identify what drives you. Remember, your plan will change based on your life experiences, so be sure you have a living plan, not one chiseled in stone. Most importantly, find an unbiased mentor that will be a sounding board and challenge you to be a better version of yourself."

BUSINESS MANAGEMENT & ADMINISTRATION

Occupational Title/Description	Holland Code Related Occupations	National Number Employed	ND Outlook 2012-2022 Number Employed	Total Openings	Long-Term Growth Outlook	ND Earnings 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 Business Management Analyst; Business Process Consultant	718,700	675	245	High Growth	$43,880 $69,750	
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 Press Secretary; Publicity Writer	229,100	457	114	Avg to Near Avg Growth	$34,500 $53,950	
Statisticians Develop or apply mathematical or statistical theory and methods to collect, organize, interpret, and summarize numerical data to provide usable information. May specialize in fields such as bio-statistics, agricultural statistics, business statistics, or economic statistics.	Conventional Biostatistician; Statistical Analyst	30,000	89	46	High Growth	$47,130 $64,200	
Training and Development Specialists Design and conduct training and development programs to improve individual and organizational performance. May analyze training needs.	Social Computer Training Specialist; Workforce Development Specialist	228,800	569	209	High Growth	$36,020 $55,110	

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, NDSCS, SBC, UTTC) Computer Applications (CCCC) Computer Support Specialist (BSC,TMCC) Office Administration (BJCC, DSU) Reception Services (DCB)		
Business Information Management	Business Management (MaSU, NDSCS, RC, UTTC, WSC) Computer Information Systems (BSC, DCB, NDSCS) Information Processing Specialist (BSC) Information Tech/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 (MaSU, UM, UND) Information Technology Management (RC, UM) Management Communication (NDSU) Management Information Systems (MiSU, NDSU)	Information Systems (MiSU)
General Management	Business Administration transfer (BSC, CCCC, DCB, LRSC, NDSCS, NHSC, SBC, TBC, TMCC) Business Education transfer (BSC, DCB) Computer Support Specialist (BSC,TMCC) Entrepreneurship (BSC,CCCC,NDSCS, SBC,TMCC) Management (BSC)	Applied Management (MiSU) 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, UND, VCSU) 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, VCSU) Human Resources and Organizational Leadership (RC)	
Operations Management		Business Economics (UND) Business Management (RC, UM) Business Systems 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
BJCC	Burdick Job Corps Center	http://quentinnburdick.jobcorps.gov
CCCC	Cankdeska Cikana Community College	www.littlehoop.edu
DCB	Dakota College at Bottineau	www.dakotacollege.edu
DSU	Dickinson State University	www.dickinsonstate.edu
LRSC	Lake Region State College	www.lrsc.edu
MaSU	Mayville State College	www.mayvillestate.edu
MiSU	Minot State University	www.minotstateu.edu
NDSCS	ND State College of Science	www.ndscs.edu
NDSU	ND State University	www.ndsu.edu
NHSC	Nueta Hidatsa Sahnish College	http://nhsc.edu
RC	Rasmussen College - Fargo	www.rasmussen.edu
SBC	Sitting Bull College	www.sittingbull.edu
TBC	Trinity Bible College	www.trinitybiblecollege.edu
TMCC	Turtle Mountain Community College	www.tm.edu
UTTC	United Tribes Technical College	www.uttc.edu
UJ	University of Jamestown	www.uj.edu
UM	University of Mary	www.umary.edu
UND	University of North Dakota	www.und.edu
VCSU	Valley City State University	www.vcsu.edu
WSC	Williston State College	www.willistonstate.edu

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PATHWAYS TO COLLEGE & CAREER READINESS
Education & Training

EDUCATION & TRAINING

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

Occupational Title/Description	Holland Code Related Occupations	National Number Employed	ND Outlook 2012-2022 Number Employed	Total Openings	Long-Term Growth Outlook	ND Earnings 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	670	135	Below Avg Growth	$19,580 $28,400	
Recreation Workers Conduct recreation activities with groups in public, private, or volunteer agencies or recreation facilities. 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 individual members.	Social Activities Aide; Camp Counselor; Playground Worker	379,300	1,201	289	Avg to Near Avg Growth	$19,840 $29,700	
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, nonvocational, and nonacademic subjects. Teaching may or may not take place in a traditional educational institution.	Social Citizenship Teacher; Horseback Riding Instructor	316,200	483	133	Avg to Near Avg Growth	$17,100 $26,780	
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	1,223,400	4,027	1,312	Avg to Near Avg Growth	$24,330 $30,220	
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	85,400	544	202	Avg to Near Avg Growth	$40,700 $53,620	
Dietitians and Nutritionists Plan and conduct food service or nutritional programs to assist in the promotion of health and control of disease. May supervise a department providing quantity food services, counsel individuals, or conduct nutritional research.	Investigative Clinical Dietitian; Public Health Nutritionist	66,700	220	72	High Growth	$40,770 $53,000	
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	231,500	524	193	Avg to Near Avg Growth	$63,140 $85,740	
Educational, Guidance, School, and Vocational Counselors Counsel individuals and provide group educational and vocational guidance services.	Social Career Counselor; Student Development Advisor	262,300	692	231	Avg to Near Avg Growth	$40,060 $55,250	
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	1,361,200	5,073	2,006	High Growth	$36,870 $47,110	
Instructional Coordinators Develop instructional material, coordinate educational content, and incorporate current technology in specialized fields that provide guidelines to educators and instructors for developing curricula and conducting courses. Includes educational consultants and specialists, and instructional material directors.	Social Curriculum and Assessment Director; Special Education Curriculum Specialist	147,700	221	45	Avg to Near Avg Growth	$38,660 $64,980	
Interpreters and Translators Interpret oral or sign language, or translate written text from one language into another.	Artistic American Sign Language Interpreter; Court Interpreter	61,000	157	101	Exceptional	$22,730 $35,930	
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	67,800	152	76	Exceptional	$48,680 $75,280	
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 to the mentally impaired.	Social Severe Emotional Disorders Teacher; Special Education Preschool Teacher	194,600	730	199	Avg to Near Avg Growth	$40,760 $51,430	

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) Higher Education (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 Disorders (MiSU, UND) Communication Education (DSU)	Communication Sciences and Disorders (MiSU, UND) Counseling, Guidance, Student Affairs (NDSU, UM, 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, CCCC, DCB, NHSC, UTTC) Health, Physical Education and Recreation (CCCC, NDSCS, UTTC) Middle School Education transfer (WSC) Physical Education transfer (BSC, DCB) Secondary Education transfer (BSC, DCB, WSC) Special Education transfer (DCB, WSC)	Agriculture Education (NDSU) Biology Education (DSU, MiSU, NDSU, UM, UND, VCSU) Business Education (DSU, MiSU, UM, VCSU) Chemistry Education (DSU, MiSU, NDSU, UJ, UND, VCSU) Elementary Education (DSU, MaSU, MiSU, NHSC, SBC, TBC, TMCC, UTTC, UJ, UM, UND, VCSU) English Education (DSU, MaSU, MiSU, NDSU, UJ, UM, UND, VCSU) Family & Consumer Sciences Education (NDSU) Health Education (MaSU, NDSU, VCSU) Math Education (DSU, MaSU, MiSU, NDSU, UJ, UM, UND, VCSU) Music Education (DSU,MiSU,NDSU,UJ,UM,UND,VCSU) Physical Education (DSU, MaSU, MiSU, NDSU,TBC, UJ, UM, VCSU) Science Education (DSU, MiSU, NDSU, SBC, UND, TMCC) Social Science Education (DSU, MaSU, MiSU, NDSU, UM, UND, VCSU) Special Education (MaSU, MiSU, SBC, UM) Technology Education (DSU, VCSU)	Agriculture Education (NDSU) Curriculum, Instruction, and Assessment (UJ, UM) Early Childhood Education (UND) Education (MiSU, NDSU, UJ, UM, UND) Elementary Education (UM, UND) English Language Learner (ELL) Education (UND) Instructional Design and Technology (UND) Reading Education (UND) Special Education (MiSU, UM, UND) Sports and Physical Education (UM) STEM Education (NDSU) Teaching: Mathematics (MiSU) Teaching: Science (MiSU) Teaching and Learning (UND)

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.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
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

CHRISTINE FANNIK
Wishek High School

Cluster: *Education & Training*
Pathway: *Teaching/Training*

Christine joined FFA as a 7th grader and was involved through graduation at Wishek High School. She competed in Livestock Judging, the Supervised Agricultural Experience (SAE) in Sales and Service, and was a state Star finalist in Ag Placement.

Christine held local FFA offices and served as the ND State FFA President. "Many of the qualities and skills I possess were shaped through my involvement with FFA. I was able to develop leadership qualities including public speaking and teamwork skills. I also had the opportunity to network with amazing people that I've kept in contact with. FFA gives students the opportunity to learn the importance of hard work, dedication, and it allows you to build relationships with others who share a passion for agriculture."

Her initial career path was veterinary technician. She soon realized that her interest in agriculture went beyond animals. She enjoyed crop and weed science, woodworking and the FFA. She changed her major to Ag Education during her sophomore year at North Dakota State University.

Many people have had a positive impact and been supportive of Christine's career. Her parents and grandparents demonstrated that hard work pays off, and encouraged her to pursue the career she was most interested in. Rocky Brown, her former Ag instructor, was also influential. "Rocky helped me find success and is one of the biggest reasons I decided to pursue the teaching career path. I hope to impact the lives of students the way he impacted mine."

One of the things Christine enjoys most is that each day and week are different. Because of the diversity of the Ag curriculum, she is able to teach many different subjects in a year, and change the curriculum from year-to-year as well. As FFA advisor, she spends many hours before and after school with students working on projects, practicing for contests and helping with classroom and lab work. She values the relationship she has with students, and she hopes that success in the classroom will prepare students for the challenges after high school. Although it will take time to build a successful program, she wants her program to be the best it can be.

"If you know what career path you're going to pursue after high school, that's great, but don't become discouraged if you're not sure what you want to do. Take classes you enjoy, and find a career path that gives you a sense of accomplishment at the end of the day. Find your passion and make a difference in the world around you."

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Finance

FINANCE

Planning, services for financial and investment planning, banking, insurance, and business financial management.

Occupational Title/Description	Holland Code Related Occupations	National	ND Outlook 2012-2022			ND Earnings Outlook	
		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	545,300	2,092	1,166	Below Avg Growth	$21,650 $28,220	
Bill and Account Collectors Locate and notify customers of delinquent accounts to solicit payment. Duties inclu de receiving payment and posting amount to customer's account; preparing statements to credit department if customer fails to respond; initiating repossession proceedings or service disconnection; and keeping records of collection and status of accounts.	Conventional Collection Agent; Debt Collector; Repossessor	397,400	899	393	Avg to Near Avg Growth	$24,480 $34,660	
Brokerage Clerks Perform duties related to the purchase, sale or holding of securities. Duties include writing orders for purchases or sales, computing transfer taxes, verifying transactions, accepting and delivering securities, tracking price fluctuations, computing equity, distributing dividends, and keeping daily records of transactions.	Conventional Commodities Clerk; Dividend Clerk	61,900	44	13	Below Avg Growth	$35,230 $49,320	
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	533	180	Avg to Near Avg Growth	$28,840 $46,800	
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	182	26	Below Avg Growth	$29,460 $37,260	
Insurance Claims and Policy Processing Clerks Process new insurance policies, modifications to existing policies, and claims forms. Obtain information from policyholders to verify the accuracy and completeness of information on claims forms, applications and related documents, and company records. 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	964	413	High Growth	$30,390 $38,880	
Title Examiners, Abstractors, and Searchers Search real estate records, examine titles, or summarize pertinent legal or insurance documents or details for a variety of purposes. May compile lists of mortgages, contracts, and other instruments pertaining to titles by searching records for law firms, real estate agencies, or title insurance companies.	Conventional Escrow Officer; Lien Searcher; Title Officer	67,900	352	108	Avg to Near Avg Growth	$33,010 $46,060	
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	61,800	129	62	High Growth	$35,750 $51,990	
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	79	28	High Growth	$32,710 $49,780	
Financial Analysts Conduct quantitative analyses of information affecting investment programs of public or private institutions.	Conventional Corporate Securities Research Analyst	277,600	257	153	Exceptional	$51,530 $74,230	
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	532,100	1,190	428	High Growth	$69,210 $110,890	
Insurance Underwriters Review individual applications for insurance to evaluate degree of risk involved and determine acceptance of applications.	Conventional Automobile and Property Underwriter	103,400	178	50	Below Avg Growth	$38,580 $58,540	
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 and agents, collection analysts, loan servicing officers, and loan underwriters.	Conventional Commercial Lender; Loan Reviewer; Real Estate Loan Officer	296,900	1,040	354	Avg to Near Avg Growth	$45,590 $70,220	

Energy Occupation **Bright Outlook** **High Skill** **High Wage** **Military**

FINANCE

Occupational Title/Description	Holland Code Related Occupations	National Number Employed	ND Outlook 2012-2022 Number Employed	Total Openings	Long-Term Growth Outlook	ND Earnings Outlook Annual Entry-Level Wages Annual Average Wages	Occupational Trait(s)
Postsecondary Programs – Bachelor's Degree or Higher							
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	354,600	466	168	Avg to Near Avg Growth	$36,150 $95,310	
Tax Preparers Prepare tax returns for individuals or small businesses.	Conventional Tax Advisor; Licensed Tax Consultant	90,400	126	44	Avg to Near Avg Growth	$35,860 $54,060	

North Dakota Finance Related Postsecondary Programs

Pathway	Certificate or Associate's Degree	Bachelor's Degree	Master's Degree or More
Accounting	Accounting (CCCC, RC, WSC) Accounting transfer (BSC, DCB, LRSC) Accounting Technician (DCB, DSU, TMCC)	Accounting (DSU, MiSU, NDSU, RC, UJ, UM, UND) Business Administration/Accounting (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, UND)	Applied Economics (UND)
Business Finance	Business Management/Business Technology (MaSU, NDSCS, WSC) Finance transfer (DCB, NDSCS)	Business Administration/Finance (VCSU) Energy Economics and Finance (MiSU) Finance (DSU, MiSU, NDSU, RC)	
Insurance	Marketing (DCB, LRSC, RC)	Marketing (MiSU, NDSU, RC, UM, UND, VCSU)	
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.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

NOTES

CareerClusters®
PATHWAYS TO COLLEGE & CAREER READINESS
Government & Public Administration

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.

Occupational Title/Description	Holland Code Related Occupations	National Number Employed	ND Outlook 2012-2022 Number Employed	Total Openings	Long-Term Growth Outlook	ND Earnings 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 Public Housing Interviewer; Unemployment Benefits Claims Taker	138,100	440	153	Avg to Near Avg Growth	$34,570 $43,360	
Postmasters and Mail Superintendents Plan, direct, or coordinate operational, administrative, management, and supportive services of a U.S. post office; or coordinate activities of workers engaged in postal and related work in assigned post office.	Enterprising Postal Supervisor; Postmaster	17,300	270	60	Below Avg Growth	$41,370 $58,310	
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 for natural, wartime, or technological disasters or hostage situations.	Social Disaster Response Director	9,900	81	22	Avg to Near Avg Growth	$36,950 $60,100	
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 Bank Examiner	29,200	93	32	Below Avg Growth	$48,170 $75,230	
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 Internal Revenue Service Agent	69,500	85	32	Below Avg Growth	$32,830 $60,960	

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 (BSC, TMCC, WSC)	Arabic (MiSU) Chinese Studies (UND) French (MiSU, NDSU, UJ, UND) German (MiSU, UJ, UND) International Studies (UND) Norwegian (UND) Spanish (DSU, MiSU, NDSU, UJ, UM, UND, VCSU)	Linguistics (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) Native Community Development (SBC)	Behavioral Statistics (NDSU) Economics (NDSU, UND) Energy Economics and Finance (MiSU)	Applied Economics (UND) 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, CCCC, DCB, DSU, LRSC, RC, TMCC, WSC)	Accounting (DSU, MiSU, NDSU, RC, UJ, UM, UND, VCSU)	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

HEALTH SCIENCE

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

CareerClusters® PATHWAYS TO COLLEGE & CAREER READINESS
Health Science

Occupational Title/Description	Holland Code Related Occupations	National Number Employed	ND Outlook 2012-2022 Number Employed	Total Openings	Long-Term Growth Outlook	ND Earnings 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	51,600	72	36	Exceptional	$26,290 $43,250	
Dental Assistants Many tasks, ranging from providing patient care and taking x rays to recordkeeping and scheduling appointments. Duties vary by s tate and by the dentists' offices where they work.	Conventional Certified Dental Assistant; Orthodontic Assistant	303,200	635	233	Avg to Near Avg Growth	$34,090 $42,000	
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	192,800	676	340	High Growth	$55,480 $64,510	
Dental Laboratory Technicians Construct and repair full or partial dentures or dental appliances.	Realistic Crown Technician; Orthodontic Technician	39,000	239	122	High Growth	$24,200 $36,060	
Diagnostic Medical Sonographers Produce ultrasonic recordings of internal organs for use by physicians.	Investigative Ultrasound Technologist	60,700	43	26	Exceptional	$52,860 $64,840	
Emergency Medical Technicians Assess injuries, administer emergency medical care, and extricate trapped individuals. Transport injured or sick persons to medical facilities.	Social Flight Paramedic	239,100	747	375	High Growth	$17,950 $31,330	
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	875,100	1,972	923	Exceptional	$23,830 $30,160	
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 me dical technologist.	Realistic Pathology Technician; Cytogenetic Technologist	161,500	396	216	Exceptional	$33,300 $41,730	
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 heath care system.	Conventional Health Information Coder; Medical Records Specialist	186,300	726	351	High Growth	$27,760 $38,550	
Medical Transcriptionists Transcribe medical reports recorded by physicians and other healthcare practitioners. Transcribe dictated reports and translate abbreviations into fully understandable form.	Conventional Medical Stenographer; Pathology Transcriptionist	84,100	446	111	Below Avg Growth	$26,570 $34,810	
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	738,400	3,342	1,499	High Growth	$34,040 $41,250	
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	2,711,500	7,731	3,134	High Growth	$47,060 $58,890	
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. May transfer or transport patients. Includes nursing care attendants, nursing aides, and nursing attendants.	Social Certified Nursing Assistant; Nursing Care Attendant	1,479,800	6,721	2,452	High Growth	$24,950 $29,520	
Occupational Therapy Assistants Assist occupational therapists in providing occupational therapy treatments and procedures.	Social Physical Therapist Assistants	30,300	120	75	Exceptional	$32,910 $45,900	
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	114	37	High Growth	$29,240 $42,570	
Pharmacy Technicians Assist licensed pharmacists dispense prescription medication to customers or health professionals.	Conventional Pharmacist; Pharmacy Assistant	355,300	729	203	High Growth	$28,840 $36,690	

Energy Occupation **Bright Outlook** **High Skill** **High Wage** **Military**

HEALTH SCIENCE

Occupational Title/Description	Holland Code Related Occupations	National Number Employed	ND Outlook 2012-2022 Number Employed	Total Openings	Long-Term Growth Outlook	ND Earnings 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 nonradioactive 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	199,200	544	201	High Growth	$38,600 $49,900	
Respiratory Therapists Assess, treat, and care for patients with breathing disorders. Assume primary responsibility for all respiratory care modalities, including the supervision of respiratory therapy technicians. Initiate and conduct therapeutic procedures; maintain patient records; and select, assemble, check, and operate equipment.	Social Inhalation Therapist; Oxygen Therapist; Registered Respiratory Therapist	119,300	336	136	Exceptional	$43,310 $50,960	
Surgical Technologists Assist in operations, under supervision of surgeons, registered nurses or other surgical personnel.	Realistic Operating Room (OR) Tech; Surgical Scrub Technologist	98,500	330	145	Exceptional	$32,860 $39,700	
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	22,900	76	41	Exceptional	$29,900 $38,310	
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	44,400	293	69	Below Avg Growth	$28,590 $69,310	
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	125,800	179	63	Avg to Near Avg Growth	$115,430 $214,450	
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	67,400	220	72	High Growth	$40,770 $53,000	
Family and General Practitioners Physicians who diagnose, treat, and help prevent diseases and injuries that commonly occur in the general population. May refer patients to specialists when needed for further diagnosis or treatment.	Investigative Surgeon, Pediatrician	124,000	638	226	Avg to Near Avg Growth	$77,690 $191,930	
Health Educators Provide and manage health education programs that help individuals, families, and their communities maximize and maintain healthy lifestyles. Collect and analyze data to identify community needs prior to planning, implementing, monitoring, and evaluating programs designed to encourage healthy lifestyles, policies, and environments. May administer fiscal resources for health education programs.	Social Diabetes Educator; Public Health Educator	58,900	184	82	High Growth	$39,460 $51,190	
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	315,500	755	354	High Growth	$58,250 $91,540	
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. Includes physicians, dentists, public health specialists, pharmacologists, and medical pathologists who primarily conduct research.	Investigative Cancer Researcher; Toxicologist	103,100	59	12	Zero to Declining Growth	$50,540 $80,530	
Mental Health Counselors Counsel with emphasis on prevention. Work with individuals and groups to promote optimum mental and emotional health. May help individuals deal with issues associated with addictions and substance abuse; family, parenting, and marital problems; stress management; self-esteem; and aging.	Social Licensed Clinical Mental Health Counselor (LCMHC)	128,400	136	65	Exceptional	$30,810 $44,460	
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	113,200	428	168	Exceptional	$52,210 $65,110	
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	33,100	189	92	High Growth	$68,340 $125,120	
Pharmacists Dispense drugs prescribed by physicians and other health practitioners and provide information to patients about medication and their use.	Investigative Pharmacologist, Pharmacy Technician	286,400	833	328	Avg to Near Avg Growth	$94,050 $112,110	
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	204,200	537	289	Exceptional	$60,650 $73,310	

HEALTH SCIENCE

Occupational Title/Description	Holland Code Related Occupations	National Number Employed	ND Outlook 2012-2022 Number Employed	Total Openings	Long-Term Growth Outlook	ND Earnings Outlook Annual Entry-Level Wages Annual Average Wages	Occupational Trait(s)
Postsecondary Programs – Bachelor's Degree or Higher							
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	86,700	286	148	Exceptional	$81,190 $111,940	
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. Coordinate activities for residents of care and treatment facilities. Assess client needs and design and implement rehabilitation programs that may include personal and vocational counseling, training, and job placement.	Social Veterans Rehabilitation Counselor; Vocational Rehabilitation Counselor	120,100	167	66	High Growth	$31,070 $43,060	
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	89,600	320	129	High Growth	$30,810 $44,460	

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, TMCC)	Bioinformatics (MiSU) Biotechnology (NDSU) Pharmaceutical Sciences (NDSU)	Biomedical Sciences (UND) Genomics and Bioinformatics (NDSU) Pharmaceutical Sciences/Pharmacy (NDSU)
Diagnostic Services	Clinical Laboratory Science transfer (NDSCS) Dialysis Technician (NDSCS) EMT – Paramedic Technician (BSC, DCB, NDSCS) Medical Laboratory Technician (BSC, TMCC) Medical Laboratory transfer (BSC) Phlebotomy Technician (BSC, TMCC)	Medical Lab Science (MaSU, MiSU, NDSU, UJ, UM, UND, VCSU) Communication Sciences and Disorders (UM, UND) Radiologic Technology (MiSU, NDSU, UJ, UM)	Medical Lab Science (UND)
Health Informatics	Community Health Worker (SBC) Health Information Technician/Management (DCB, NDSCS) Medical Administrative Asst. (BJCC, DCB, RC) Medical Coding/Billing (DCB, NDSCS, RC, UTTC, WSC)	Community Nutrition (UND) Forensic Science (UND) Healthcare Management (RC) Health Administration (UM) Health Communication (NDSU)	Health Care Administration (UM) Nurse Administrator (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)	Corporate Fitness/Wellness (MaSU, MiSU) Exercise Science (DSU, NDSU, UJ, UM) Kinesiology (UND) Social Work (MiSU, UM, UND)	Clinical Exercise Physiology (UM) Exercise Science and Nutrition (NDSU) Exercise Physiology/Kinesiology (UM, UND) Social Work (UND)
Therapeutic Services	Addictions Studies Transfer (NHSC) Dental Assisting/Hygiene (NDSCS) Health/Medical Assistant (CCCC, DCB) Massage Therapy (JSHDF, JSHDGF, TSPA, WSC) Mental Health/Addictions Technician (WSC) Nursing transfer (BSC, CCCC, DCB, LRSC, NDSCS, SBC, WSC) Occupational Therapy Assistant (NDSCS) Practical Nursing (BSC, BJCC, DCB, DSU, NDSCS, NHSC, SBC, TMCC, UTTC, WSC) Pre-Professional transfer (BSC, DCB, MaSU, NDSCS, TMCC, WSC) Surgical Technology (BSC)	Addiction Studies (MiSU) Athletic Training (MiSU, UM, UND) Dietetics (NDSU, UND) Music Therapy (UND) Nursing (DSU, MaSU, MiSU, NDSU, RC, UJ, UM, UND) Pre-Professional Programs (MaSU, MiSU, UM) Rehabilitation and Human Services (UND) Respiratory Care/Therapy (NDSU, UM)	Advanced Nursing Practice (NDSU) Advanced Athletic Training (NDSU) Dietetics (NDSU) Health, Nutrition and Exercise Science (NDSU) Gerontology (NDSU) Nursing (NDSU, UM, UND) Nutrition (UND) Occupational Therapy (UM, UND) Physical Therapy (UJ, UM, UND) Physician Assistant (UND) Psychological Clinical Science (NDSU) Respiratory Therapy (UM)

North Dakota Postsecondary Institutions Offering Health Science Related Programs

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

CareerClusters®
PATHWAYS TO COLLEGE & CAREER READINESS
Hospitality & Tourism

HOSPITALITY & TOURISM

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

Occupational Title/Description	Holland Code Related Occupations	National Number Employed	ND Outlook 2012-2022 Number Employed	Total Openings	Long-Term Growth Outlook	ND Earnings 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	267,100	866	525	Avg to Near Avg Growth	$17,010 $20,960	Bright Outlook
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. Train animals according to prescribed standards for show or competition.	Realistic Guide Dog Trainer; Horse Breaker; Marine Mammal Trainer	36,800	102	55	Avg to Near Avg Growth	$25,130 $27,900	
Bakers Mix and bake ingredients to produce breads, rolls, cookies, cakes, pies, pastries, or other baked goods.	Realistic Bagel Maker; Pastry Finisher	185,300	221	154	Exceptional	$21,420 $28,840	Military
Food Service Managers Plan, direct, or coordinate activities of an organization or department that serves food and beverages.	Enterprising Banquet Director; Food Service Director	321,400	597	136	Below Avg Growth	$41,350 $55,880	High Wage, Military
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'	347,300	851	751	Avg to Near Avg Growth	$16,890 $19,200	Bright Outlook
Hotel, Motel, and Resort Desk Clerks Accommodate hotel, motel, and resort patrons by assigning rooms to guests, issuing room keys, transmitting and receiving messages, keeping records of guests' accounts, making reservations, and presenting statements to and collecting payments from departing guests.	Conventional Hotel Front Desk Clerk; Hotel Registration Clerk	231,600	1,241	820	High Growth	$19,310 $25,460	Bright Outlook, Military
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	50,400	145	54	Below Avg Growth	$40,850 $60,630	High Wage, Military
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	1,434,600	5,805	2,023	Avg to Near Avg Growth	$17,680 $23,540	Bright Outlook
Recreation Workers Conduct recreation activities with groups in public, private, or volunteer agencies or recreation facilities. 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 individual members.	Social Activities Aide; Camp Counselor; Playground Worker	345,400	1,201	289	Avg to Near Avg Growth	$19,840 $29,700	Bright Outlook, Military
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	41,400	203	119	Avg to Near Avg Growth	$17,150 $19,280	
Travel Agents Plan itineraries and arrange accommodations and other travel services for customers. May plan and sell package tours. Compute costs, make hotel reservations, obtain collect payment.	Enterprising Travel Service Consultant, Reservation Agent	73,300	311	47	Zero to Declining Growth	$26,340 $35,500	
Waiters and Waitresses Take orders and serve food and beverages to patrons at tables in dining establishment.	Social Flight Attendants, Hosts and Hostesses	2,362,200	7,787	4,778	Avg to Near Avg Growth	$16,990 $21,060	Bright Outlook
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	27	9	Avg to Near Avg Growth	$30,950 $40,780	High Skill, Military
Interpreters and Translators Interpret oral or sign language, or translate written text from one language into another.	Artistic Court Interpreter; Diplomatic Interpreter	61,000	157	101	Exceptional	$22,730 $35,930	Bright Outlook, High Skill, Military
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	94,200	179	90	Exceptional	$31,250 $45,010	Bright Outlook, High Skill

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, DCB) Marketing/Management (DCB, LRSC, NDSCS, NHSC, RC)	Business Administration/Hospitality & Tourism Mgmt. (UJ) Hospitality & Tourism Management (NDSU)	
Recreation, Amusements & Attractions	Advertising & Marketing (DCB) Facilities Maintenance (BJCC) Golf Course Grounds Technician (DCB) Management (BSC, DCB) Marketing/Management (DCB, LRSC, NDSCS, NHSC RC) Recreation Management (DCB) Theatre Arts transfer (BSC)	Apparel, Retail Merchandising and Design (NDSU) Applied Management (MiSU) Sports Management (MaSU) Sports & Leisure Management (UM) Sports and Urban Turfgrass Management (NDSU) Theatre Arts (DSU, MiSU, NDSU, UND)	Management (MiSU) Merchandising (NDSU) Theatre Arts (UND)
Restaurant & Food/ Beverage Services	Food Service/Culinary Arts (BJCC, NDSCS) Nutrition and Foodservice (UTTC) Restaurant Management (NDSCS)	Dietetics (NDSU, UND) Food Safety (NDSU) Hospitality & Tourism Management (NDSU)	Dietetics (NDSU) Food Safety (NDSU) Nutrition (UND)
Travel & Tourism	Advertising & Marketing (DCB) Management (BSC,DCB) Marketing/Management (DCB, LRSC, NDSCS, NHSC, RC) Reception Services (DCB) Spanish transfer (BSC)	Arabic (MiSU) Chinese Studies (UND) Culture Studies (UM) French (MiSU, NDSU, UJ, UND) German (MiSU, UJ, UND) International/Intercultural Studies (TBC, UND) Marketing/Management (MiSU, NDSU,RC, UM, VCSU) Native American Studies (NHSC) Norwegian (UND) Spanish (DSU, MiSU, NDSU, UJ, UM, UND, VCSU)	

North Dakota Postsecondary Institutions Offering Hospitality & Tourism 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	www.rasmussen.edu
DCB	Dakota College at Bottineau	www.dakotacollege.edu	**TBC**	Trinity Bible College	www.trinitybiblecollege.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			

RACHEL HASKINS ALLERDINGS

Minot High School

Cluster: *Hospitality & Tourism*

Pathway: *Restaurant & Food/Beverage Services*

Rachel Allerdings is the owner and operator of Sweet Treats Cupcake Bar and Bakery in Bismarck. Owning a business was not the career path she envisioned when she graduated from high school; however, it is a career that she loves!

While attending Minot High School, Rachel was a DECA member and president during her senior year. She worked in the school store, participated in a variety of events and placed in the top 16 at the National DECA conference. Rachel feels her involvement with DECA gave her the confidence to open a business. While she has not had any formal business training, her high school experiences helped her realize that it was possible to be a successful business owner.

After high school, she first attended the University of North Dakota, and later transferred to Minot State University, earning a Bachelor's Degree in Social Work. During high school and college, Rachel pursued baking as a hobby and limited source of income. After completing her college degree, she continued to bake. Eventually, Rachel was baking so often that she needed to either quit baking or pursue it full time. She enjoys baking and interacting with people, so the decision to start a business was made.

As a little girl, Rachel remembers her Mom and Granny baking birthday cakes and treats. She would choose the design for her birthday cake and her Mom would find a way to create it. Rachel is from a family of "very strong females" and they support each other in every way. She is also very appreciative of the support her husband and father have shown in helping her open the doors to Sweet Treats.

Owning a business means you must handle all aspects of the job. Customer service is one of the essential elements of her work. She works hard to satisfy customers so they will keep coming back for her products. One of her challenges is finding employees that love the bakery business the same way that she does. For some, work at the bakery is a job, yet for Rachel it is her whole world. She is proud of her contribution to the downtown community and is thankful for the loyalty of her customers.

The journey Rachel has taken from high school to the present is not unusual. She earned a college degree, and made a decision to pursue something different. "Keep an open mind and be willing to try new things. College will help you shape your future and have some fun in the process. You want your career to be something you love."

CareerClusters®
PATHWAYS TO COLLEGE & CAREER READINESS
Human Services

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.

Occupational Title/Description	Holland Code Related Occupations	National Number Employed	ND Outlook 2012-2022 Number Employed	Total Openings	Long-Term Growth Outlook	ND Earnings 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	1,312,700	3,921	1,647	Avg to Near Avg Growth	$17,040 $20,550	
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	267,000	670	135	Below Avg Growth	$19,580 $28,400	
Funeral Attendants Perform variety of tasks during funeral, such as placing casket in parlor or chapel prior to service; arranging floral offerings or lights around casket; directing or escorting mourners; closing casket; and issuing and storing funeral equipment.	Social Funeral Home Assistant; Mortician Helper; Pallbearer	36,100	100	21	Zero to Declining Growth	$17,100 $23,860	
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	611,200	1,939	623	Below Avg Growth	$19,030 $29,650	
Manicurists and Pedicurists Clean and shape customers' fingernails and toenails. May polish or decorate nails.	Realistic Nail Technician	113,600	86	12	Below Avg Growth	$17,140 $19,660	
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	132,800	323	57	Below Avg Growth	$29,790 $44,960	
Morticians, Undertakers, and Funeral Directors Perform various tasks to arrange and direct funeral services, such as coordinating transportation of body to mortuary, interviewing family or other authorized person to arrange details, aiding with the selection of officials for religious rites, and providing transportation for mourners.	Social Certified Mortician; Funeral Arranger	23,500	85	25	Below Avg Growth	$28,430 $47,460	
Social and Human Service Assistants Assist in providing client services in many fields, such as psychology, rehabilitation, or social work. May 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, rehabilitation, or dependent care.	Conventional Case Work Aide; Family Service Assistant; Human Services Worker	372,700	859	387	High Growth	$24,370 $33,590	
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	285,700	486	177	Avg to Near Avg Growth	$37,310 $50,040	
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	239,600	1,060	217	Zero to Declining Growth	$34,590 $52,270	
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. May design and implement behavior modification programs.	Investigative Child Psychologist; School Psychologist	145,100	268	95	Below Avg Growth	$46,370 $79,910	
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	134,200	278	95	Zero to Declining Growth	$35,170 $48,620	
Emergency Management Directors Plan and direct disaster response or crisis management activities, and prepare emergency plans and procedures for natural (e.g., hurricanes, floods, earthquakes), technological (e.g., nuclear power plant emergencies or hazardous materials spills) disasters or hostage situations.	Social Disaster Response Director; Public Safety Director	10,500	81	22	Avg to Near Avg Growth	$36,950 $60,100	
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. May also provide case management or interventions designed to promote health and prevent disease.	Social Hospice Social Worker; Oncology Social Worker; Public Health Social Worker	146,200	446	173	High Growth	$38,360 $47,920	

HUMAN SERVICES

Occupational Title/Description	Holland Code Related Occupations	National Number Employed	ND Outlook 2012-2022 Number Employed	Total Openings	Long-Term Growth Outlook	ND Earnings Outlook Annual Entry-Level Wages Annual Average Wages	Occupational Trait(s)
Postsecondary Programs – Bachelor's Degree or Higher							
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	102	53	Exceptional	$33,100 $46,080	
Mental Health Counselors Counsel with emphasis on prevention. May help individuals deal with issues associated with addictions and substance abuse; family, parenting, and marital problems; stress management; self-esteem; and aging.	Social Licensed Clinical Mental Health Counselor (LCMHC)	134,500	136	65	Exceptional	$30,810 $44,460	
Probation Officers and Correctional Treatment Specialists Provide social services to assist in rehabilitation of law offenders in custody or on probation or parole. Make recommendations for actions involving formulation of rehabilitation plan and treatment of offender, including conditional release and education and employment stipulations.	Social Juvenile Probation Officer; Parole Agent; Parole Officer	90,300	175	52	Below Avg Growth	$43,690 $52,850	

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,DCB, RC, SBC, UTTC, WSC)	Business Administration (NDSU, UJ, SBC,TBC,UTTC, VCSU) Management (MiSU, NDSU, RC, UTTC, UM, UND, VCSU)	Business Administration (NDSU)
Counseling & Mental Health Services	Addiction Studies (NHSC) Mental Health/Addictions Technician (WSC) Psychology transfer (BSC, DCB, NDSCS, TMCC, WSC)	Addiction Studies (MiSU) Applied Psychology (MaSU) Psychology (MiSU, NDSU, UJ, UM, UND, VCSU)	Clinical Counseling (UJ) Counseling (NDSU, UM, UND) Counseling Education and Supervision (NDSU) Counseling Psychology & Community Services (UND) Couple and Family Therapy (NDSU) 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) Developmental Science (NDSU) 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) 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)	Gerontology (NDSU) Human Development & Family Science (NDSU) Missional Leadership (TBC) Public Health (NDSU, UND) 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) Exercise Science (DSU, NDSU, UJ, UM) Sport Management (NDSU)	Advanced Athletic Training (NDSU) Clinical Exercise Physiology (UM) Exercise Science and Nutrition (NDSU)

North Dakota Postsecondary Institutions Offering Human Services Related Programs

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

CareerClusters®
PATHWAYS TO COLLEGE & CAREER READINESS
Information Technology

INFORMATION TECHNOLOGY

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

Occupational Title/Description	Holland Code Related Occupations	National	ND Outlook 2012-2022			ND Earnings Outlook	
		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. Perform network maintenance to ensure networks operate correctly with minimal interruption.	Realistic Network Diagnostic Support Technician; Network Support Technician	181,000	532	131	Below Avg Growth	$39,590 $53,640	High Skill, High Wage
Computer Operators Monitor and control electronic computer and peripheral electronic data processing equipment to process business, scientific, engineering, and other data according to operating instructions. Monitor and respond to operating and error messages. May enter commands at a computer terminal and set controls on computer and peripheral devices.	Conventional Computer Peripheral Equipment Operator; Console Operator	74,600	253	25	Zero to Declining Growth	$24,360 $34,480	Military
Computer User Support Specialists Provide technical assistance to computer users. Answer questions or resolve computer problems for clients in person, or via telephone or electronically. May provide assistance concerning the use of computer hardware and software, including printing, installation, word processing, electronic mail, and operating systems.	Realistic Desktop Support Specialist; End-User Support Specialist; Help Desk Technician	547,700	1,868	780	Exceptional	$31,740 $46,820	Bright Outlook, High Skill, Military
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 designed to facilitate the creation of Web and multimedia content.	Conventional Internet Developer; Intranet Developer; Web Designer	148,500	290	103	High Growth	$38,540 $58,670	Bright Outlook, High Skill, High Wage
Word Processors and Typists Use word processor, computer or typewriter to type letters, reports, forms, or other material from rough draft, corrected copy, or voice recording. May perform other clerical duties as assigned.	Conventional Clerk Typist; Transcription Typist	90,700	182	7	Zero to Declining Growth	$20,990 $28,080	
Postsecondary Programs – Bachelor's Degree or Higher							
Computer Hardware Engineers Research, design, develop, or test computer or computer-related equipment for commercial, industrial, military, or scientific use. May supervise the manufacturing and installation of computer or computer-related equipment and components.	Investigative Computer Hardware Designer; Computer Hardware Developer	83,300	27	13	Exceptional	$42,080 $95,160	High Skill, High Wage
Computer Programmers Create, modify, and test the code, forms, and script that allow computer applications to run. Work from specifications drawn up by software developers or other individuals. May assist software developers by analyzing user needs and designing software solutions. May develop and write computer programs to store, locate, and retrieve specific documents, data, and information.	Investigative Applications Programmer; Computer Language Coder; Systems Programmer	343,700	457	139	Below Avg Growth	$41,000 $55,530	High Skill, High Wage, Military
Database Administrators Administer, test, and implement computer databases, applying knowledge of database management systems. Coordinate changes to computer databases. May plan, coordinate, and implement security measures to safeguard computer databases.	Conventional Database System Specialist; Database Security Administrator	118,700	189	73	High Growth	$48,790 $79,820	Bright Outlook, High Skill, High Wage, Military
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. May respond to computer security breaches and viruses.	Conventional Computer Security Specialist; Internet Security Specialist	75,100	243	145	Exceptional	$49,350 $67,930	Bright Outlook, High Skill, High Wage, Military
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	366,400	551	163	Avg to Near Avg Growth	$51,740 $68,110	Bright Outlook, High Skill, High Wage
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; Software Applications Engineer	613,000	1,031	363	High Growth	$50,820 $72,720	Bright Outlook, High Skill, High Wage

Energy Occupation | Bright Outlook | High Skill | High Wage | Military

INFORMATION TECHNOLOGY

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 Information Systems (BSC, DCB) Computer Support Specialist (BSC, TMCC) Computer Technology/Information Technology (DCB) Geographic Information Systems Technician (BSC) Information Systems Administrator (NDSCS) Information Processing Specialist (BSC) Information Management (NHSC, RC) Information Technology (LRSC, NDSCS, RC, SBC, WSC) IT Forensics (NDSCS) Management Information Systems transfer (NDSCS)	Applied Business Information Technology (MiSU) Computer Technology Management (DSU) Information Security (RC) Management Information Science (UJ) Information Technology (UJ) Information Technology Management (RC, UM) Technology Education (DSU, VCSU)	Information Systems (MiSU) Library/Information Technology (VCSU) Technology (UND)
Network Systems	Information Management(NHSC, RC) Information Technology (LRSC, NDSCS, RC, SBC, WSC)	Computer Information Systems (MaSU, 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 and Computer 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 (NDSCS) Web Developer (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.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

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CareerClusters®
PATHWAYS TO COLLEGE & CAREER READINESS
Law, Public Safety, Corrections & Security

LAW, PUBLIC SAFETY, CORRECTIONS & SECURITY

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

Occupational Title/Description	Holland Code Related Occupations	National Number Employed	ND Outlook 2012-2022 Number Employed	Total Openings	Long-Term Growth Outlook	ND Earnings Outlook Annual Entry-Level Wages Annual Average Wages	Occupational Trait(s)
Postsecondary Programs – High School Diploma, Certificate, or Associate's Degree							
Court Reporters Use verbatim methods and equipment to capture, store, retrieve, and transcribe pretrial and trial proceedings or other information. Includes stenocaptioners who operate computerized stenographic captioning equipment to provide captions of live or prerecorded broadcasts for hearing-impaired viewers.	Conventional Court Transcriber; Deposition Reporter	21,200	74	20	Avg to Near Avg Growth	$38,630 $49,510	High Skill, High Wage
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	115,200	320	92	Below Avg Growth	$52,830 $77,870	High Wage
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	307,000	544	198	Below Avg Growth	$29,730 $42,720	Bright Outlook, High Skill, Military
Legal Technicians (Paralegals) 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	277,000	403	150	High Growth	$29,290 $43,740	Bright Outlook, High Skill
Police, Fire, and Ambulance Dispatchers Operate radio, telephone, or computer equipment at emergency response centers. Receive reports from the public of crimes, disturbances, fires, and medical or police emergencies. Relay information to law enforcement and emergency response personnel. May maintain contact with caller until responders arrive.	Conventional Emergency Operator; 911 Operator; Police Radio Dispatcher	98,500	480	159	Avg to Near Avg Growth	$26,270 $37,080	Military
Title Examiners, Abstractors, and Searchers Search real estate records, examine titles, or summarize pertinent legal or insurance documents or details. May compile lists of mortgages, contracts, and other instruments pertaining to titles by searching public and private records for law firms, real estate agencies, or title insurance companies.	Conventional Escrow Officer; Lien Searcher; Title Officer	71,100	352	108	Avg to Near Avg Growth	$33,010 $46,060	Bright Outlook
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	50,800	166	61	Avg to Near Avg Growth	$34,330 $39,940	
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. May serve as specialists in area of expertise, such as ballistics, fingerprinting, handwriting, or biochemistry.	Investigative Ballistics Expert; Crime Scene Technician; Trace Evidence Technician	12,900	21	11	Avg to Near Avg Growth	$35,130 $42,140	High Skill
Judicial Law Clerks Assist judges in court or by conducting research or preparing legal documents.	Conventional Judicial Clerk	12,100	43	11	Below Avg Growth	$56,450 $68,230	High Skill, High Wage
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	759,800	1,541	384	Below Avg Growth	$55,550 $101,840	Bright Outlook, High Skill, High Wage, Military
Probation Officers and Correctional Treatment Specialists Provide social services to assist in rehabilitation of law offenders in custody or on probation or parole. Make recommendations for actions involving rehabilitation plan and treatment of offender, including conditional release, education and employment stipulations.	Social Juvenile Probation Officer; Parole Agent; Parole Officer	91,700	175	52	Below Avg Growth	$43,690 $52,850	High Skill, High Wage
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	538	185	Avg to Near Avg Growth	$52,570 $66,130	Bright Outlook, High Skill, High Wage, Military

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, UM, UND)	Criminal Justice (NDSU, UND)
Emergency & Fire Management Services	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, UM, UND) Forensic Science (UND)	Criminal Justice (NDSU, UND)
Legal Services	Law Transfer (NDSCS, WSC) 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.uttc.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			

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CareerClusters® PATHWAYS TO COLLEGE & CAREER READINESS
Manufacturing

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.

Occupational Title/Description	Holland Code Related Occupations	National Number Employed	ND Outlook 2012-2022 Number Employed	Total Openings	Long-Term Growth Outlook	ND Earnings Outlook Annual Entry-Level Wages Annual Average Wages	Occupational Trait(s)
Postsecondary Programs – High School Diploma, Certificate, or Associate's Degree							
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	140,300	22	15	Exceptional	$39,440 $43,460	
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	198,300	338	126	High Growth	$20,700 $31,350	
First-Line 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	594,700	1,493	446	Avg to Near Avg Growth	$38,790 $62,120	
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	319,300	1,614	886	Exceptional	$39,340 $59,190	
Inspectors, Testers, Sorters, Samplers, and Weighers Inspect, test, sort, sample, or weigh nonagricultural raw materials or processed, machined, fabricated, or assembled parts or products for defects, wear, and deviations from specifications. May use precision measuring instruments and complex test equipment.	Conventional Parts Quality Inspector; Petroleum Sampler	464,300	676	300	High Growth	$29,590 $57,410	
Jewelers and Precious Stone and Metal Workers Design, fabricate, adjust, repair, or appraise jewelry, gold, silver, other precious metals, or gems. Includes diamond polishers and gem cutters, and persons who perform precision casting and modeling of molds, casting metal in molds, or setting precious and semi-precious stones for jewelry and related products.	Realistic Diamond Setter; Gemologist; Goldsmith	32,700	109	22	Zero to Declining Growth	$26,810 $39,520	
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, applying knowledge of mechanics, mathematics, metal properties, layout, and machining procedures.	Realistic Automotive Machinist; Gear Machinist; Production Machinist	397,500	980	483	Exceptional	$32,730 $42,230	
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; Optomechanical Technician	47,500	324	154	Exceptional	$41,650 $56,630	
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	85,900	82	18	Below Avg Growth	$26,690 $36,940	
Power Plant Operators Control, operate, or maintain machinery to generate electric power. Includes auxiliary equipment operators.	Realistic Hydroelectric Plant Operator	41,800	335	104	Zero to Declining Growth	$51,880 $75,590	
Production, Planning, and Expediting Clerks Coordinate the flow of work and materials between departments according to production schedule. Duties include reviewing production, work, and shipment schedules; conferring with department supervisors; and compiling reports on progress of work, inventory levels, costs, and production problems.	Conventional Expeditor; Material Control Clerk; Production Scheduler	284,700	185	82	Below Avg Growth	$31,940 $42,420	
Structural Metal Fabricators and Fitters Fabricate, position, align, and fit parts of structural metal products.	Realistic Mill Beam Fitter; Protector Plate Attacher	79,700	210	131	High Growth	$29,360 $39,890	
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	78,600	100	17	Avg to Near Avg Growth	$39,730 $44,950	
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	357,400	3,079	1,257	High Growth	$34,350 $53,100	

MANUFACTURING

Occupational Title/Description	Holland Code Related Occupations	National Number Employed	ND Outlook 2012-2022 Number Employed	Total Openings	Long-Term Growth Outlook	ND Earnings Outlook Annual Entry-Level Wages Annual Average Wages	Occupational Trait(s)
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	328	89	Below Avg Growth	$60,220 $96,860	High Skill, High Wage
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. May conduct inspections and enforce adherence to laws and regulations governing the health and safety of individuals.	Investigative Environmental Health Sanitarian; Health and Safety Inspector; Industrial Hygienist	70,300	314	110	Below Avg Growth	$59,360 $82,540	High Skill, High Wage, Military
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, normally obtained from at least 2 years of post-secondary education.	Enterprising Pharmaceutical Sales Representative; Surgical Instruments Sales Representative	382,300	898	291	Avg to Near Avg Growth	$49,640 $85,420	Bright Outlook, High Skill, High Wage

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 (CCCC, 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 Management/Technology (DCB) Information Processing Specialist (BSC) Management Information Systems (NDSCS)	Business Process 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, LWT, 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) Renewable Generation Technology (BSC)	Engineering Science (UM) Industrial Engineering and Management (NDSU) Manufacturing Engineering (NDSU)	Engineering (NDSU) Industrial Engineering and Management (NDSU) Industrial and Manufacturing Engineering (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, LWT, 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

CareerClusters® PATHWAYS TO COLLEGE & CAREER READINESS
Marketing

MARKETING

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

Occupational Title/Description	Holland Code Related Occupations	National Number Employed	ND Outlook 2012-2022 Number Employed	Total Openings	Long-Term Growth Outlook	ND Earnings 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	3,338,900	12,023	6,306	Below Avg Growth	$17,220 $22,150	
Demonstrators and Product Promoters Demonstrate merchandise and answer questions for the purpose of creating public interest in buying the product. May sell demonstrated merchandise.	Enterprising In-Store Demonstrator	78,100	196	98	High Growth	$23,350 $29,920	
First-Line Supervisors of Retail Sales Workers Directly supervise and coordinate activities of retail sales workers in an establishment or department. Duties may include management functions, such as purchasing, budgeting, accounting, and personnel work, in addition to supervisory duties.	Enterprising Cashier Supervisor; Delicatessen Department Manager	1,603,300	4,263	1,399	Avg to Near Avg Growth	$29,050 $44,970	
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	98,700	371	163	High Growth	$25,220 $32,180	
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 (including rights-of-way).	Enterprising Apartment Manager; Building Rental Manager; Leasing Property Manager	297,000	515	198	Avg to Near Avg Growth	$31,390 $60,640	
Real Estate Agents Rent, buy, or sell property for clients. 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. Includes agents who represent buyer.	Enterprising Apartment Rental Agent; Right of Way Agent	342,400	1,174	261	Avg to Near Avg Growth	$27,610 $51,140	
Retail Salespersons Sell merchandise, such as furniture, motor vehicles, appliances, or apparel to consumers.	Enterprising Car Salesperson; Apparel Salesperson	4,487,000	12,974	6,317	Avg to Near Avg Growth	$18,770 $30,740	
Telemarketers Solicit donations or orders for goods or services over the telephone.	Enterprising Sales Representative; Telephone Solicitor	250,100	700	152	Below Avg Growth	$17,200 $22,200	
Wholesale and Retail Buyers, Except Farm Products Buy merchandise or commodities for resale to consumers at the wholesale or retail level, including both durable and nondurable goods. Analyze buying trends, sales records, price, and quality of merchandise to determine value. Select, order, and authorize payment for merchandise according to contractual agreements. May conduct meetings with sales personnel and introduce new products.	Enterprising Gold Buyer; Merchandise Buyer	124,600	363	160	High Growth	$33,590 $51,550	
Postsecondary Programs – Bachelor's Degree or Higher							
Advertising and Promotions Managers Plan, direct, or coordinate advertising policies and programs or produce collateral materials, such as posters, contests, coupons, or giveaways, to create extra interest in the purchase of a product or service for a department, an entire organization, or on an account basis.	Enterprising Advertising Director; Advertising Executive; Promotions Director	31,000	74	29	Below Avg Growth	$48,260 $75,340	
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	193	33	Below Avg Growth	$27,480 $47,450	
Market Research Analysts and Marketing Specialists Research market conditions in local, regional, or national areas, or gather information to determine potential sales of a product or service, or create a marketing campaign. May gather information on competitors, prices, sales, and methods of marketing and distribution.	Investigative Research Specialist; Marketing Consultant; Marketing Forecaster	415,700	804	409	Exceptional	$36,320 $55,310	
Marketing Managers Plan, direct, or coordinate marketing policies and programs, such as determining the demand for products and services and identify potential customers. 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. Oversee product development or monitor trends that indicate the need for new products and services.	Enterprising Internet Marketing Manager; Marketing Administrator; Marketing Director	180,500	305	118	High Growth	$56,700 $104,900	
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; Regional Sales Manager	359,300	825	345	High Growth	$59,560 $106,870	

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 (BSC) Management Entrepreneurship (BSC) Marketing (LRSC, RC) Marketing and Management transfer (DCB) Small Business Management (DCB)	Business Management (RC, UM, VCSU) Management (MiSU, NDSU, UND) Management Communication (NDSU) Marketing (MiSU, NDSU, RC, UM, UND, VCSU) Sport & Leisure Management (UM)	Management (MiSU)
Marketing Research	Business Systems Analysis (RC)	Business Systems Analysis (RC)	
Merchandising	Art Marketing (UTTC) Marketing (LRSC, RC)	Apparel, Retail Merchandising, & Design (NDSU) Operations and Supply Chain Management (UND)	Merchandising (NDSU)
Professional Selling	Entrepreneurship (CCCC, NDSCS, SBC, TMCC)	Art Entrepreneurship (DSU) Computer Information Systems/Customer Relationship Management (VCSU) 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.uttc.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			

Energy Occupation **Bright Outlook** **High Skill** **High Wage** **Military**

NOTES

CareerClusters®
PATHWAYS TO COLLEGE & CAREER READINESS
Science, Technology, Engineering & Mathematics

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.

Occupational Title/Description	Holland Code Related Occupations	National	ND Outlook 2012-2022			ND Earnings Outlook	
		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							
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.	Enterprising Gyroscope Engineering Technician; Heat Transfer Technician	48,400	324	154	Exceptional	$41,650 $56,630	
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	2,600	44	13	Below Avg Growth	$62,360 $77,830	
Atmospheric and Space Scientists Investigate atmospheric phenomena and interpret meteorological data, gathered by surface and air stations, satellites, and radar to prepare reports and forecasts for public and other uses. Includes weather analysts and forecasters whose functions require the detailed knowledge of meteorology.	Investigative Atmospheric Chemist; Climatologist; Hurricane Tracker; Meteorologist	11,100	46	13	Below Avg Growth	$60,790 $86,960	
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; Polymerization Engineer	33,300	74	41	Exceptional	$66,630 $98,990	
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	7,400	41	17	Avg to Near Avg Growth	$58,890 $77,800	
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; Packaging Engineer	223,300	729	443	Exceptional	$47,230 $77,330	
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	258,100	545	297	High Growth	$46,140 $74,950	
Microbiologists Investigate the growth, structure, development, and other characteristics of microscopic organisms, such as bacteria, algae, or fungi. Includes medical microbiologists who study the relationship between organisms and disease or the effects of antibiotics on microorganisms.	Investigative Bacteriologist; Public Health Microbiologist; Virologist	20,100	39	16	Avg to Near Avg Growth	$43,030 $51,070	
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. May inspect areas for unsafe geological conditions, equipment, and working conditions. May design, implement, and coordinate mine safety programs.	Investigative Geophysical Engineer; Mineral Engineer; Seismic Engineer	7,900	80	52	Exceptional	$55,470 $96,420	
Petroleum Engineers Devise methods to improve oil and gas extraction and production and determine the need for new or modified tool designs. Oversee drilling and offer technical advice.	Investigative Natural Gas Engineer; Oil Exploration Engineer	38,500	446	442	Exceptional	$74,080 $125,040	
Statisticians Develop or apply mathematical or statistical theory and methods to collect, organize, interpret, and summarize numerical data to provide usable information. May specialize in fields such as bio-statistics, agricultural statistics, business statistics, or economic statistics. Includes mathematical and survey statisticians.	Conventional Biostatistician; Statistical Analyst; Time Study Statistician	27,600	89	46	High Growth	$47,130 $64,200	
Zoologists and Wildlife Biologists Study the origins, behavior, diseases, genetics, and life processes of animals and wildlife. May specialize in wildlife research and management. May 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	20,100	65	22	Below Avg Growth	$27,760 $53,910	

Energy Occupation **Bright Outlook** **High Skill** **High Wage** **Military**

SCIENCE, TECHNOLOGY, ENGINEERING & MATHEMATICS

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) Land Surveying and Civil Engineering (NDSCS) Nanoscience Technology (NDSCS) Nuclear Power Technology (BSC) Petroleum Engineering Technology (BSC) Petroleum Production Technology (BSC, NHSC, WSC) Engineering (BSC, CCCC, DCB, NDSCS, NHSC, SBC, TMCC, WSC) Robotics, Automation & Mechatronics Technology (NDSCS) Simulator Maintenance Technology (LRSC)	Agricultural and Biosystems Engineering (NDSU) Chemical Engineering (UND) Civil Engineering (NDSU, UND) Computer Engineering (NDSU) Construction Engineering (NDSU) Electrical Engineering (NDSU, UND) Geological Engineering (UND) Industrial Engineering and Management (NDSU) Industrial Technology (UND) Manufacturing Engineering (NDSU) Mechanical Engineering (NDSU, UJ, UND) Petroleum Engineering (UND)	Aerospace Sciences (UND) Agricultural and Biosystems Engineering (NDSU) Chemical Engineering (UND) Civil Engineering (NDSU, UND) Electrical/Computer Engineering (NDSU, UND) Environmental Engineering (NDSU, UND) Geological Engineering (UND) Manufacturing Engineering (NDSU) Mechanical Engineering (NDSU, UND) Software Engineering (NDSU) Sustainable Energy Engineering (UND) Technology (UND)
Science & Mathematics	Biology (BSC, DCB, TMCC, WSC) Biotechnology (NDSCS) Chemistry transfer (BSC, DCB, NDSCS, TMCC, WSC) Environmental Science (CCCC, NHSC, TMCC, WSC) Environmental Technology (DCB) Math (BSC, DCB, NDSCS, NHSC, TMCC, WSC) Natural Science (NDSCS, TMCC) Pharmacy (WSC) Physical Science (NDSCS, WSC) Physics (BSC, WSC) Science (CCCC, NHSC) Tribal Environmental Science (UTTC)	Atmospheric Sciences (UND) Biology (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) Environmental Science (DSU, NHSC, SBC, UND) Geology (MiSU, NDSU, UND) Horticulture (NDSU) Math (DSU, MaSU, MiSU, NDSU, UJ, UM,UND, VCSU) Physics (NDSU, UND) Statistics (NDSU) Zoology (NDSU)	Atmospheric Sciences (UND) Biochemistry/Biomedical Sciences (NDSU) Biology (NDSU,UND) Botany (NDSU) Chemistry (NDSU,UND) Entomology (NDSU) Environmental & Conservation Science(NDSU, SBC) Geology (UND) Math (NDSU,UND) Microbiology (NDSU) Physics/Astrophysics (NDSU, UND) Statistics (NDSU)

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

CHRIS RUMMEL
Dickinson High School

Cluster: *STEM - Science, Technology, Engineering & Mathematics*
Pathway: *Engineering & Technology*

Chris Rummel has been working on computers since age five. As a member of the Dickinson Technology Student Association (TSA), he participated in the Web Design and Computer Repair events at the state and national levels.

Chris took Advanced Placement classes while in high school. The college credits he earned gave him flexibility to spend more time on classes of interest. He thinks it is helpful to try a lot of different things both inside and outside the school setting. The key to college success depends on finding the most appealing program of study and getting used to learning in a less-structured environment.

The software engineering program at The Raikes School of Computer Science and Management, University of Nebraska-Lincoln was a "perfect fit" for him.

Chris works at the Microsoft Fargo office. The Fargo site is centered on the Microsoft Business Services division, mostly Dynamics AX. The office has a strong legacy of continuing the quality of work started by Great Plains Software, which was later acquired by Microsoft. Many Fargo employees have a long work history with the company with an understanding of the original product development.

Chris is assigned to the .NET Core team which is mostly centered in Redmond, Washington. Microsoft is moving to open source a lot of work within .NET. He is currently moving tests to the open-source project on GitHub, which involves figuring out why some tests work differently in his local environment versus the open environment and fixing them. It is challenging to clean up code for the general public that has been in existence for a long time and needs a lot of work. His work hours are flexible, which is nice since he works with so many people in Redmond.

Quality work is essential to the success of the company. When he joined the .NET Core team, he was told that there were over 1.8 billion machines running .NET, so even a 0.1% failure rate is unacceptable because it affects a million machines. Understanding the potential impact of an error helps him do his best work.

"I might be biased by my field, but I think career readiness is getting a good grounding in your career path and learning how problems are solved. In the STEM fields, it's hard to learn exactly how to solve problems that you will need to work through ten years from now, but knowing there's a wealth of past experience and knowledge on the process needed to solve that problem is essential."

CareerClusters®
PATHWAYS TO COLLEGE & CAREER READINESS
Transportation, Distribution & Logistics

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.

Occupational Title/Description	Holland Code Related Occupations	National Number Employed	ND Outlook 2012-2022 Number Employed	Total Openings	Long-Term Growth Outlook	ND Earnings 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, consoles, simulators, and other data acquisition, test, and measurement instruments and equipment, which are used to launch, track, position, and evaluate air and space vehicles. May record and interpret test data.	Realistic Altitude Chamber Technician; Wind Tunnel Technician	9,900	37	13	Avg to Near Avg Growth	$41,430 $58,390	
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	121,700	221	154	Exceptional	$36,260 $57,800	
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	701,100	2,842	934	Below Avg Growth	$27,990 $42,570	
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	250,800	2,089	556	Below Avg Growth	$37,620 $51,620	
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. Prepare and examine bills of lading to determine shipping charges and tariffs.	Conventional Cargo Router; Freight Shipping Agent	79,500	211	164	Exceptional	$31,630 $39,610	
Commercial Pilots Pilot and navigate the flight of fixed-winged aircraft on nonscheduled 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; Helicopter Pilot	37,600	280	133	High Growth	$36,150 $59,720	
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	43,800	331	216	Exceptional	$34,160 $52,700	

AUSTIN OLIN
Fargo North High School

Cluster: *Transportation, Distribution & Logistics*
Pathway: *Facility & Mobile Equipment Maintenance*

Austin Olin dreamed of being an Air Force pilot, but an injury during high school resulted in a change to his future career plans. His Fargo North High School Construction Technology class scheduled a tour at North Dakota State College of Science in Wahpeton. While the tour was intended to focus on the Construction Technology Program, the college gave an overview of all programs, including the Powersports Technology Program. Learning that such a program was available provided Austin with a new career goal.

SkillsUSA was very important during his high school years. Austin enjoyed competing and meeting people with the same interests and skills. During high school, he started with the Cabinetmaking event at the state and national levels. While in college he competed in the Power Equipment Technology and the Motorcycle Service Technology events. He earned first place in the Motorcycle event at both the North Dakota and National contests.

SkillsUSA also gave Austin the opportunity to develop his leadership skills as a state officer, and a wide range of experiences have added value to his resume. He continues to be involved in the state organization as the Motorcycle Service Technology Technical Chair. Austin hopes to go to the national conference and help with alumni activities. He enjoys spending time with the highly skilled technicians who appreciate the benefits of SkillsUSA.

As part of earning his Associate of Applied Science (A.A.S.) degree at the North Dakota State College of Science, Austin completed a Cooperative Education class at Highway Motorsports in Hankinson. The shop specializes in Polaris and he learned a lot about working on recreational powersport equipment. He is currently working as a service technician at Legendary Motorsports in Fargo. A typical day includes working on motorcycles, four wheelers, side-by-side vehicles and jet skis. Understanding that a small mistake can cause a lot of damage is one of the challenges in his work. The completion of major projects where he can see the results or hear an engine running more smoothly gives him great satisfaction.

When asked about planning a career, he suggests the following, "Choose something that you like and would be willing to do every day." Ten years from now, Austin hopes to have his own shop to work on motorcycles and snowmobiles.

TRANSPORTATION, DISTRIBUTION & LOGISTICS

Occupational Title/Description	Holland Code Related Occupations	National Number Employed	ND Outlook 2012-2022 Number Employed	Total Openings	Long-Term Growth Outlook	ND Earnings Outlook Annual Entry-Level Wages Annual Average Wages	Occupational Trait(s)
Postsecondary Programs – High School Diploma, Certificate, or Associate's Degree							
Electrical and Electronics Installers and Repairers, Transportation Equipment Install, adjust, or maintain mobile electronics communication equipment, including sound, sonar, security, navigation, and surveillance systems on trains, watercraft, or other mobile equipment.	Realistic Locomotive Electrician; Marine Electronics Repairer	15,900	76	27	Avg to Near Avg Growth	$36,280 $52,510	
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	2,197,300	5,924	2,639	Avg to Near Avg Growth	$22,000 $32,190	
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	97	44	High Growth	$23,830 $37,760	
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; Warehouse Manager	105,200	474	145	Below Avg Growth	$59,060 $82,380	
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	125,900	212	95	Exceptional	$46,930 $60,730	

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 Collision Technology (BSC, NDSCS) Auto Technology (BSC,BJCC, CCCC, LRSC, NDSCS, UTTC) Diesel Technology (NDSCS) Electronics Technology (BSC) Electronics & Telecommunications Technology (BSC) Facilities Maintenance (BJCC) Geographic Information Systems Technology (BSC) Transportation Technician (WSC)		
Health, Safety & Environmental Management	Environmental Public Health (TMCC)	Environmental Health (DSU)	
Logistics Planning & Management Services	Information Management Systems (DCB, NHSC, RC) Information Processing Specialist (BSC) Information Technology (DCB, LRSC, NDSCS, WSC) Management Information Systems (NDSCS)	Business Administration (VCSU) Business Management (UM) Information Technology Management (DSU, UM) Management Information Systems (MiSU, NDSU, RC,UND) Operations/Supply Chain & Logistics (RC, UND)	Business Administration/Project Management (UM) Transportation and Logistics (NDSU)
Sales & Service	Business Management (WSC) Marketing & Management transfer (DCB, LRSC,RC)	Airport Management (UND) Marketing (MiSU, NDSU, RC, UM, UND)	
Transportation Operations	Airline Transport Pilot (FFS) CDL/Heavy Equipment (CCCC, NHSC,SBC,TMCC, UTTC) Commercial Pilot (EATC, FFS, GFKFS) Heavy Equipment Operator (UTTC) Instrumental/Multi-Engine Rating (EATC, FFS, GFKFS) Private Pilot (EATC, FFS, GFKFS)	Air Traffic Control (UND) Commercial Aviation (UND) Aviation Management (UND) Aviation Technology Management (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 (RC, UND)	Transportation and Urban Systems (NDSU)
Warehousing & Distribution Center Operations	Management (BSC)	Business Administration (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.uttc.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

BND

FAFSA stands for 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, 2016 as possible using the results from your 2015 Federal and State tax returns. The earlier you apply, the more likely you are to receive federal and state student aid. You should definitely apply before April 15, 2017.

Cut college costs!

- Take dual credit and advanced placement classes in high school.
- Plan class choices carefully in order to reduce the amount of time it takes you to complete your degree.
- 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.
- Control your recreation expenses. You may not be able to take that spring break trip!
- Rent books rather than purchasing them.
- Compare prices of living in a dorm versus an apartment off-campus. Students typically spend more off-campus.
- If you need a private student loan, compare Bank of North Dakota's student loan interest rates with your other options. Choose the most favorable rate.

5 ways to pay for college

- Scholarships
- Grants
- Work-study
- Savings account
- Student loans

Student loans are not free money

Many people find themselves regretting the amount of student loans they need to repay so read on and don't become one of them.

You start making payments on student loans six months after you finish college. There is a special classification of student loans called subsidized. You need to meet income requirements to receive these. If you don't meet the income requirements, you can take out unsubsidized student loans.

The main difference between these two loan types is when you are responsible for paying interest. If the loan is unsubsidized, you are responsible for paying the interest that accrues on the loan as soon as the loan is made. If the loan is subsidized, the interest does not start accruing until you finish college.

The average North Dakota student attending college in North Dakota graduates with approximately $28,000 in student loans.* The average starting salary for a new college graduate in the United States in 2015 was $40,457.** Let's assume you land that first job making $40,457 and are single. With deductions for taxes (Federal, State, FICA and Medicare), your annual take home pay is $32,921 and monthly take home pay would be $2,743.

Using the $2,743 per month figure, this is what your budget looks like:

Item	Expense amount	% of monthly take-home pay***
Student loan payment (Assuming $28,000 in loans at 4.29%)	$287	10%
Housing (Rent, mortgage, condo maintenance fee, furniture,household items)	$823	30%
Utilities (Phone, electricity, gas)	$274	10%
Credit cards	$83	3%
Food (Groceries, eating out)	$411	15%
Transportation (Car payments, insurance, gas, maintenance)	$274	10%
Other savings and investments	$274	10%
Personal expenses (Entertainment, clothing, vacations, personal care, pet care gifts, car insurance)	$317	12%
Total expenses	**$2,743**	**100%**

*BND email communication with North Dakota University Systems, 5.5.2016 **http://www.naceweb.org/s01272016/starting-salary-expectations-follow-consumer-price-index.aspx
*** http://www.quicken.com/home-budget-cost-living-reality-check

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. **If you cut your total student loan amount in half to $14,000, you would have an extra $145 to spend each month.**

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

BELCOURT
Turtle Mountain Community College
701-477-7913

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

FORT TOTTEN
Cankdeska Cikana Community College
701-766-1377

GRAFTON
North Valley Vo-Tech Center
701-352-3705

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

NEW TOWN
Nueta Hidatsa Sahnish College
701-627-4738 Ext. 8058

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

WAHPETON
ND State College of Science
701-671-2184

WEST FARGO
West Fargo Public Schools
701-356-2008

WILLISTON
Williston State College
701-572-5886

YOUR SCHOOL DOESN'T OFFER THE CLASS YOU WANT?

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

How? Here's How. NDCDE

North Dakota Center for Distance Education (NDCDE) offers over 300 fully-accredited (AdvancED), 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 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.

So….how good is NDCDE? For the school year 2015/16 NDCDE was rated the fifth best online school in the United States!

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

youth FORWARD

CONNECTING YOUTH TO OPPORTUNITIES IN NORTH DAKOTA

- CAREER CONVERSATIONS
- INTERNSHIP OPPORTUNITIES
- EDUCATIONAL RESOURCES

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@NDYouthForward
www.NDYouthForward.com

NORTH DAKOTA UNIVERSITY SYSTEM

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.

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!

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 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.

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 Admission Requirements

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

2 YEARS

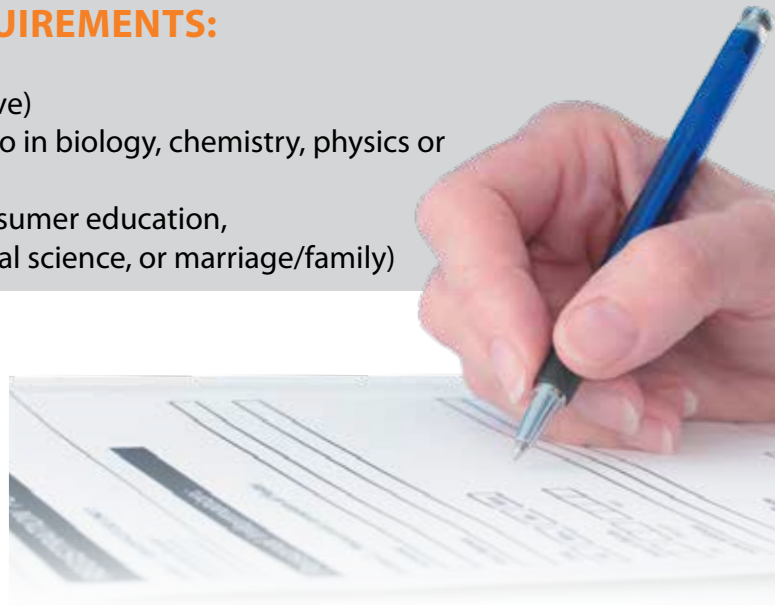
2-YEAR COLLEGE ADMISSION REQUIREMENTS:

- 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 YEARS

4-YEAR COLLEGE ADMISSION REQUIREMENTS:

- 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)



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.

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.

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

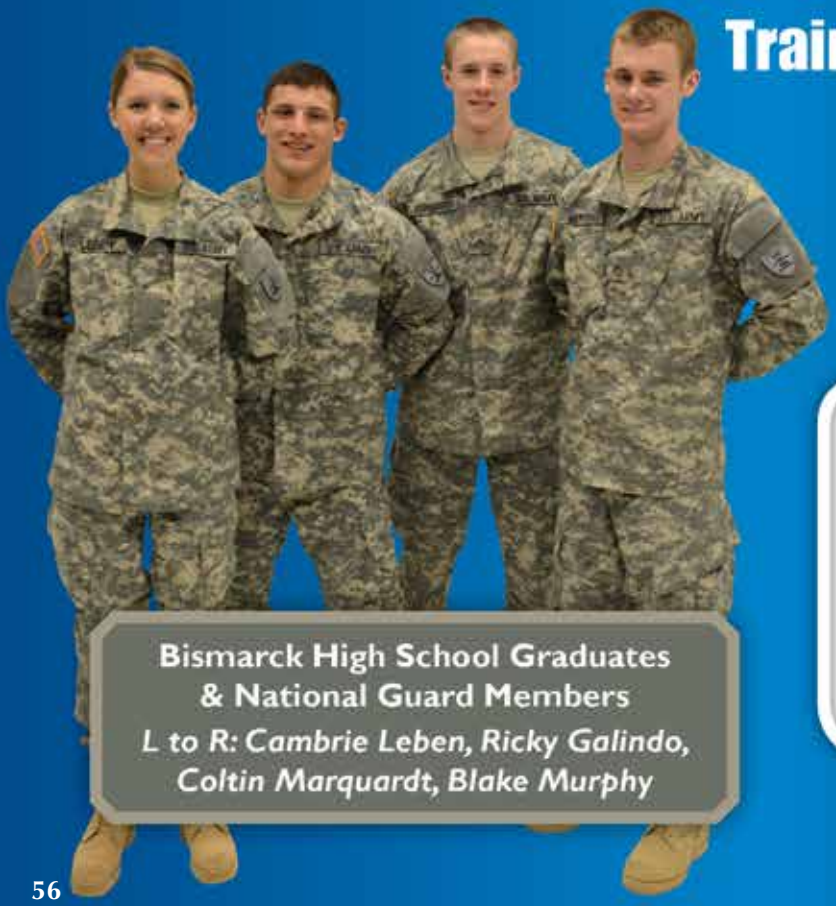
LOYALTY DUTY RESPECT SELFLESS SERVICE

ARMY BAND PERSON • PUBLIC AFFAIRS SPECIALIST • PUBLIC AFFAIRS BROADCAST SPECIALIST • CHAPLAIN ASSISTANT • DENTAL SPECIALIST • PATIENT ADMIN SPECIALIST • MEDICAL LABRATORY SPECIALIST • RADIOLOGY SPECIALIST • PREVENTATIVE MEDICINE SPECIALIST • HEALTH CARE SPECIALIST • CHEMICAL OPERATIONS SPECIALIST • MOTOR TRANSPORTATION OPERATOR • WHEELED VEHICLE MECHANIC • UTILITIES EQUIPMENT REPAIRER • POWER GENERATION EQUIP REPAIRER • ALLIED TRADES SPECIALIST • SMALL ARMS/ARTILLERY REPAIRER • FIRE CONTROL REPAIRER • TRACK VEHICLE REPAIRER • QM & CHEMICAL EQUIP REPAIRER • ARMAMENT REPAIRER • CONSTRUCTION EQUIPMENT REPAIRER • AUTOMATED LOGISTICAL SPECIALIST • PETROLEUM SUPPLY SPECIALIST • FOOD OPERATIONS SPECIALIST • WATER TREATMENT SPECIALIST • UNIT SUPPLY SPECIALIST • RADIO & COMMUNICATIONS SECURITY REPAIRER • COMPUTER/DETECTION SYSTEMS REPAIRER • RADAR REPAIRER • AVENGER SYSTEM REPAIRER

HIGH TECH, HIGHER CALLING

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. Explore careers and get great benefits that will put you on a path to success.

Train for an in-demand Career!



Bismarck High School Graduates & National Guard Members

L to R: Cambrie Leben, Ricky Galindo, Coltin Marquardt, Blake Murphy

- Tuition Assistance & Student Loan Repayment
- Earn College Credits for Basic Training & AIT
- Montgomery GI Bill worth up to $368 month
- Retirement Benefits For Part-time Service
- 401(k)-Type Savings Plan
- Low-cost Health, Life & Dental Insurance
- Discover Careers and Opportunities with the Job Shadow Program
- Serve your Community, State & Country

NORTH DAKOTA NATIONAL GUARD

NATIONALGUARD.com

HONOR INTEGRITY PERSONAL COURAGE

COMBAT ENGINEER • BRIDGE CREWMEMBER • PLUMBER • CONTRUCTION EQUIPMENT OPERATOR • INTERIOR ELECTRICIAN • TECHNICAL ENGINEER • CONCRETE/ASPHALT EQUIP OPERATOR • CARPENTRY/MASONRY SPECIALIST • GEOSPATIAL ENGINEER • TAC OPS CENTER OPERATOR/MAINTAINER • AIR AND MISSILE DEFENSE CREWMEMBER • AIRCRAFT POWERTRAIN REPAIRER • AIRCRAFT ELECTRICIAN • AIRCRAFT PNEUDRAULICS REPAIRER • AVIONICS MECHANIC • AVIATION OPERATIONS SPECIALIST • AIR TRAFFIC CONTROL OPERATOR • UH-60 HELICOPTER REPAIRER • INFORMATION TECHNOLOGY SPECIALIST • CABLE SYSTEMS INSTALLER/MAINTAINER • MICROWAVE SYSTEMS OPERATOR/MAINTAINER • MULTI-CHANNEL TRANSMISSION SYSTEMS OPERATOR/MAINTAINER • SATELLITE COMMUNICATION SYSTEMS OPERATOR/MAINTAINER • SIGNAL SUPPORT SYSTEMS SPECIALIST • PARALEGAL SPECIALIST • MILITARY POLICE • INTELLIGENCE ANALYST • HUMAN RESOURCES SPECIALIST

NORTH DAKOTA NATIONAL GUARD

ARMY NATIONAL GUARD

NATIONALGUARD.com
1-800-GO-GUARD
Bismarck • 701-328-9630
Devils Lake • 701-662-4648
Dickinson • 701-260-8767
Fargo • 701-451-6030
Grand Forks • 701-795-3848
Jamestown • 701-320-0649
Minot • 701-857-7650
Valley City • 701-845-6762
Wahpeton • 701-899-2264
Williston • 701-770-3072

NORTH DAKOTA AIR NATIONAL GUARD
GoANG.com/ND ▸ 800-TO-GO-ANG

AIR NATIONAL GUARD

www.goang.com
1-800-972-8825

ARMY & ARMY RESERVE

www.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

www.airforce.com
Bismarck • 701-226-3893
Fargo • 701-277-1818
Grand Forks • 701-775-9361
Minot • 701-839-4635

MARINES

www.marines.com
Bismarck • 701-223-3019
Fargo • 701-277-8403
Grand Forks • 701-772-3627
Minot • 701-839-2091

NAVY

www.navy.com
1-800-872-6289
Fargo • 701-277-1096 (Enlisted)
Fargo • 701-239-5091 (Officer)

UNITED STATES MILITARY ACADEMY

www.usma.edu
West Point, NY
1-845-938-4041

UNITED STATES COAST GUARD ACADEMY

www.cga.edu
New London, CT
1-800-883-8724

COAST GUARD

www.gocoastguard.com

UNITED STATES NAVAL ACADEMY

www.usna.edu
Annapolis, MD
1-410-293-4361

UNITED STATES MERCHANT MARINE ACADEMY

www.usmma.edu
Kings Point, NY
1-516-726-5800

UNITED STATES AIR FORCE ACADEMY

www.academyadmissions.com
Colorado Springs, CO
1-800-443-9266

Troops to Teachers
PROUD TO SERVE AGAIN

The Lewis & Clark Troops to Teachers regional office assists qualified military personnel with making the transition from the armed services to service in public school classrooms by providing counseling and/or financial benefits in the seven-state region. Visit the Lewis & Clark Region Troops To Teachers website at *www.montana.edu/ttt* or call 1-866-478-3224.

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

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.

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.

For more information about Vocational Rehabilitation, please visit:
www.nd.gov/dhs/dvr

Vocational Rehabilitation/Human Services Regional Offices

Relay ND TTY 1-800-366-6888

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
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
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

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*

Income before taxes $29,000
Approximate take home pay $23,200
Monthly take home pay $1,934

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

Searching for a Job?

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

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.

Helpful Source of Information

Career Builder
www.careerbuilder.com

Career OneStop
www.careeronestop.org

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

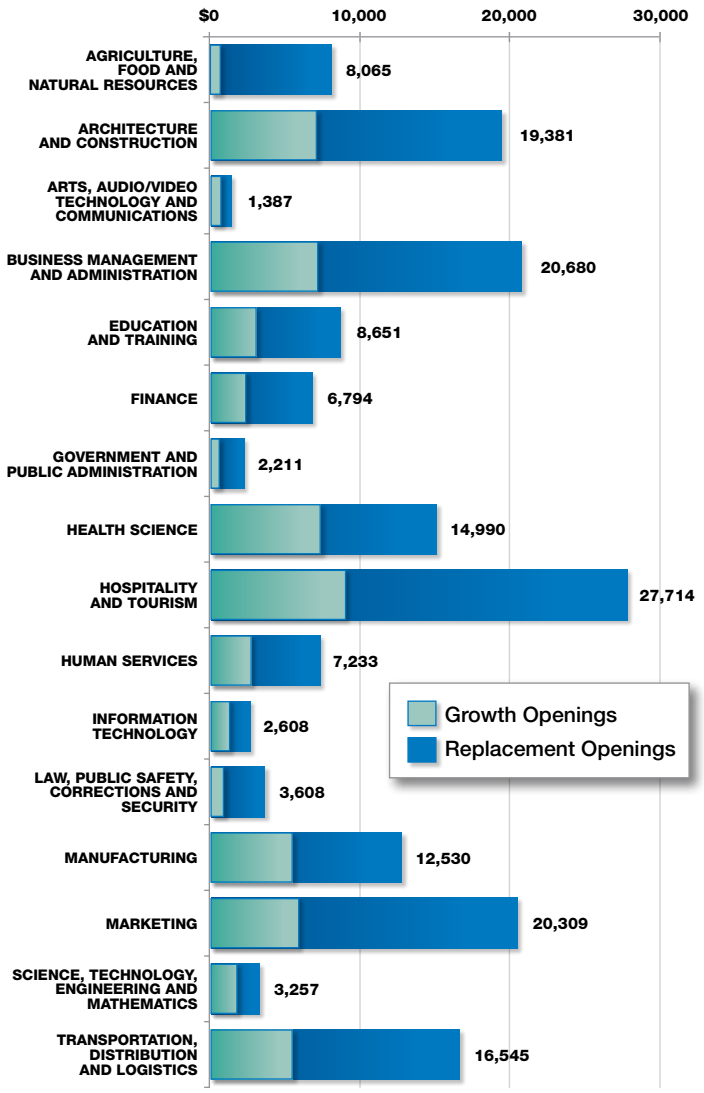
Job Service North Dakota
www.jobsnd.com

Monster
www.monster.com

JOB SERVICE North Dakota

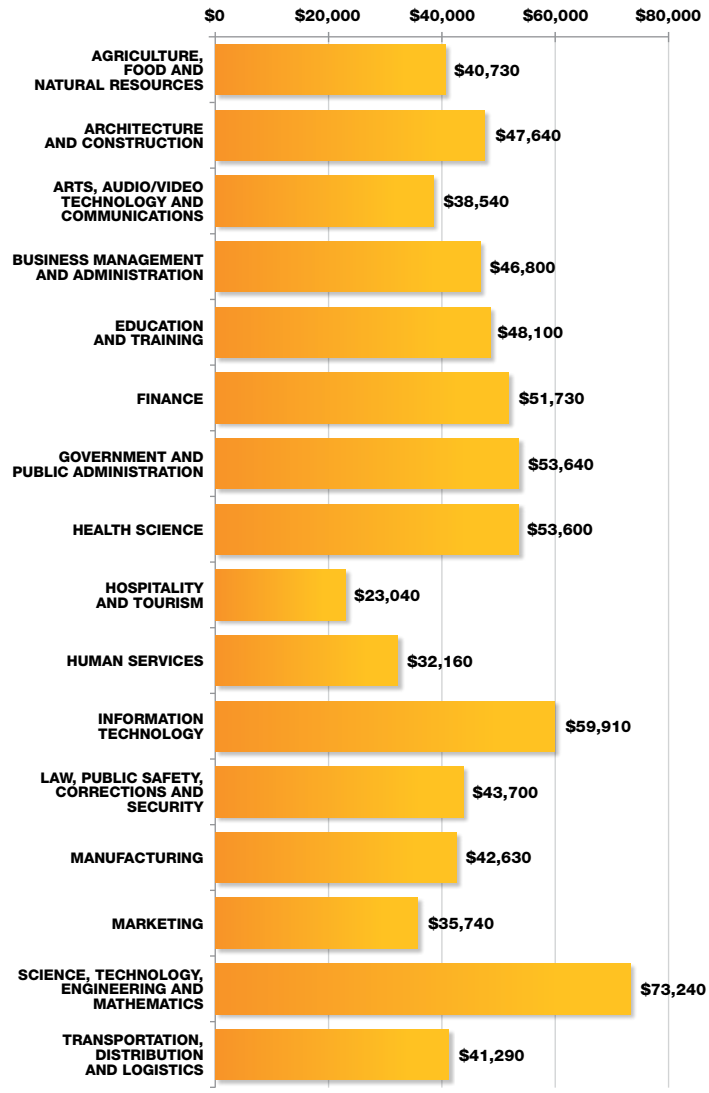
JOB SERVICE North Dakota
jobsnd.com

EMPLOYMENT PROJECTIONS 2012-2022 TOTAL OPENINGS



AVERAGE 2013 WAGES

STATEWIDE AVERAGE WAGES: $47,779



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.*

QUENTIN N. BURDICK JOB CORPS CENTER

FREE! 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 CTS staff is available for student services up to a year.

Quentinnburdick.jobcorps.gov

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.

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 to 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

ApprenticeshipUSA

Apprenticeship offers opportunities to earn a salary while learning the skills necessary to succeed in high-demand carewers. 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.*

For More Information

http://oa.doleta.gov/bat.cfm

701- 250-4700

North Dakota Postsecondary Programs and 2016-17 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	www.bismarckstate.edu	800-445-5073 or 701-224-5000	$4,388	$1,000	$6,992	$12,380
	Dakota College at Bottineau	Bottineau	www.dakotacollege.edu	800-542-6866 or 701-228-5488	$4,281	$1,298	$6,305	$11,884
	Lake Region State College	Devils Lake	www.lrsc.edu	800-443-1313 or 701-662-1600	$4,203	$1,000	$6,075	$11,278
	North Dakota State College of Science	Wahpeton	www.ndscs.edu	800-342-4325 or 701-671-2207	$4,697	$1,000	$6,298	$11,995
	Williston State College	Williston	www.willistonstate.edu	888-863-9455 or 701-774-4200	$5,027	$1,100	$8,772	$14,899
NDUS 4-Yr.	Dickinson State University	Dickinson	www.dickinsonstate.edu	800-279-4295 or 701-483-2175	$6,348	$1,200	$6,750	$14,298
	Mayville State University	Mayville	www.mayvillestate.edu	800-437-4104 or 701-788-4687	$6,254	$1,000	$7,170	$14,424
	Minot State University	Minot	www.minotstateu.edu	800-777-0750 or 701-858-3000	$6,568	$1,100	$6,164	$13,832
	North Dakota State University	Fargo	www.ndsu.edu	800-488-6378 or 702-231-8011	$8,214	$800	$8,136	$17,150
	University of North Dakota	Grand Forks	www.und.edu	800-225-5863 or 701-777-3000	$8,136	$1,000	$7,856	$16,992
	Valley City State University	Valley City	www.vcsu.edu	800-532-8641 or 701-845-7412	$7,196	$1,200	$6,352	$14,748
Private	Burdick Job Corps Center	Minot	http://quentinnburdick.jobcorps.gov	701-857-9600	See page 62 for more information.			
	Lynnes Welding Training	Bismarck/ Fargo	www.learntoweld.com	701-751-4256 or 701-373-0658	$12,375	$850	$3,450[1]	$16,675
	Rasmussen College	Fargo	www.rasmussen.edu	800-817-0009 or 701-277-3889	Costs vary, please contact Rasmussen College for more information.			
	Trinity Bible College	Ellendale	www.trinitybiblecollege.edu	800-523-1603 or 701-349-3621	$15,912	$1,000	$5,964[2]	$22,876
	University of Jamestown	Jamestown	www.uj.edu	800-336-2554 or 701-253-4318	$20,480	$1,254	$7,316	$29,050
	University of Mary	Bismarck	www.umary.edu	800-288-6279 or 701-355-8030	$17,644	$1,222	$6,482	$25,348
Tribal	Cankdeska Cikana Community College	Fort Totten	www.littlehoop.edu	888-783-1463 or 701-766-4415	$3,300	$700	$4,000[1]	$8,000
	Nueta Hidatsa Sahnish College	New Town	www.nhsc.edu	701-627-4738	$3,600	$270	$5,400	$9,270
	Sitting Bull College	Fort Yates	www.sittingbull.edu	701-854-8000	$3,910	$1,200	$5,846	$10,956
	Turtle Mountain Community College	Belcourt	www.tm.edu	701-477-7862	$2,050	$400	$3,664[1]	$6,114
	United Tribes Technical College	Bismarck	http://uttc.edu	888-643-8882 or 701-255-3285	$4,250	$1,400	$5,100	$10,750
Cosmetology/Barber	Headquarters Academy of Hair Design	Minot	http://hqacademyofhair.com	800-891-5135 or 701-852-8329	$13,815	$416	$8,880[1]	$23,111
	Josef's School of Hair Design	Fargo	www.josefsschoolofhairdesign.com	701-306-0712	$17,100	$1,800	$7,700[1]	$26,100
	Josef's School of Hair Design	Grand Forks	www.josefsschoolofhairdesign.com	701-306-0712	$16,600	$1,800	$7,700[1]	$26,100
	JZ Trend Academy–Paul Mitchell School	Bismarck	https://paulmitchell.edu/bismarck	800-767-5079 or 701-223-8154	$14,395	$2,000	$9,432[1]	$28,145
	Moler Barber College of Hairstyling	Fargo	http://molerbarberfargo.com	701-232-6773	$6,437	$855	$5,335[1]	$12,627
	The Hair Academy	Bismarck	www.thehairacademynd.com	866-793-9594 or 701-255-3547	$10,920	$1,499	$11,484[1]	$23,903
	The Salon Professional Academy	Fargo	www.tspafargo.com	877-478-1772 or 701-478-1772	$16,790	$2,325	$11,634[1]	$30,749
Flight	Executive Air Taxi Corporation	Bismarck	www.executive-air.com	701-258-5024	Costs may vary. Contact individual entities for more information.			
	Fargo Jet Center	Fargo	www.fargojet.com	800-770-0538				
	GFK Flight Support	Grand Forks	www.flygfk.com	701-772-5504				
	Minot Aero Center/Pietsch Aircraft	Minot	http://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.*

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

North Dakota Career and Technical Student Organization (CTSO) Leaders

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

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

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.

FBLA 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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E-mail: cte@nd.gov • www.nd.gov/cte