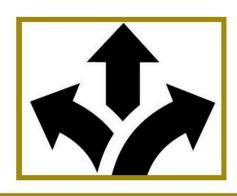


CAREER CONNECTIONS

CAREERS CLUSTERS & PATHWAYS HANDBOOK







STUDENCE ADAPT PLAN
SKILLS TRANSITION
CLEAR WORLD IMPLEMENT

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Career Clusters & Pathways Handbook

Choosing the best career path is an important decision that involves your skills, educational background and interests. Knowing the sixteen career clusters can help you choose the most appropriate path, which can guide you from your education through retirement.

This handbook does not include every single potential career pathway in existence. We based these lists off of the Government of Canada Career Clusters and felt that this was a good place to start. This list should provide Career Connections team members and students with a starting point for exploring various career pathways within different sectors.

Also, we've done our best to indicate which level of education is ideal for each job listed in this handbook, but some jobs may be open to various levels of education and experience, so this is not guaranteed to be accurate in all instances.

Finally, we've linked as many of the jobs as possible to ALIS and other career profiles, to help with further exploration for staff and students. Any Occupation that is underlined has a hyperlink to a profile.

General Career Exploration Links:

General:

ALIS - Occupations in Alberta
CareerProfiles - Career Search (USA)
CareerExplorer

Skilled Trades:

<u>Trade Secrets - Trades & Occupations List</u> <u>Careers in Construction - Career Finder</u>

Agriculture:

Ag for Life - ThinkAg
AgCareers.com - Career Profiles

Health:

AB Health Services - Career Profiles

Science:

Science Buddies - Science Careers Let's Talk Science - Career Search

Technology:

Skill Crush - 41 Tech Job Titles

Military:

Canadian Armed Forces - Career Profiles

Film:

Gov't of AB - Get into the Film Industry

Levels of Education Legend

HSD - High School Diploma

APP - Apprenticeship

CRT - Certificate

DIP - Diploma

DEG - Undergraduate/Bachelor's Degree

PRF - Professional Program

MST - Master's Degree

PHD - Doctoral Degree

1. Agriculture, Food and Natural Resources

Description: This cluster includes everything on the creation of agricultural products, This includes Farmers, Ranchers, Scientists, Engineers and Veterinarians. The work environment is mostly outdoors, most people who work in this field enjoy being outside.

Career Pathway	Occupation	Level of Education
Agribusiness Systems	 Buyers and Purchasing Agents. Farm production Farm Labor contractors Famers, Ranchers, and other Agricultural managers 	DIP, DEG HSD, CRT, DIP CRT, DIP, DEG
Animal Systems	 Animal Breeders Animal Caretakers Animal Scientists Farmworkers, Farm, Ranch and Aquacultural Animals 	 CRT, DIP, DEG HSD, CRT, DIP DEG, MST, PHD HSD, CRT, DIP
Environmental Service Systems	 Environmental Engineering Technologists and Technicians Environmental Engineers Environmental Science and Protection Technicians, Including Health Hazardous Materials Removal Workers Pest Control Workers Refuse and Recyclable Material Collectors Water and Wastewater Treatment Plant and System Operators Water/Wastewater Engineers 	DIP DEG DIP HSD, CRT, DIP HSD, CRT, DIP HSD CRT, DIP DEG
Food Products & Processing Systems	 Agricultural Technicians Supervisors of Farming, Fishing, and Forestry Workers Food Science Technicians Food Scientists and Technologists Graders and Sorters, Agricultural Products 	 CRT, DIP, DEG DIP, DEG DIP DEG, MST, PHD HSD, CRT
Natural Resources Systems	 Clinical Research Coordinators Fallers Fishing and Hunting Workers Forest and Conservation Technicians/Workers Foresters Geological Technicians Hydrologist Log Graders and Scalers Logging Equipment Operators Logging Workers. All Other Natural Science Managers Water Resource Specialists Zoologists and Wildlife Biologists 	DIP, DEG HSD, CRT, DIP HSD, CRT, DIP DIP, DEG DEG, MST DIP DEG, MST HSD, CRT, DIP HSD, CRT HSD, CRT DIP, DEG DIP, DEG DIP, DEG DEG, MST, PHD
Plant Systems	 Agricultural Workers, All Other Biological Technicians Farmworkers and Laborers, Crop. Nursery, and Greenhouse Pesticide Handlers, Sprayers, and Applicators, Vegetation Soil and Plant Scientists Tree Trimmers and Pruners 	HSD, CRT, DIP DIP HSD, CRT, DIP CRT, DIP DEG, MST, PHD HSD, CRT
Power, Structural & Technical Systems	Agricultural Engineers Agricultural Equipment Operators Farm Equipment Mechanics and Service Technicians	DEG HSD, CRT APP, CRT, DIP

2. Architecture and Construction

Description: The Architecture and Construction cluster includes designing, industrial facilities, building and maintaining homes, carpentry. Students interested in this cluster have strong skills in math and are passionate about design, home improvement and decor.

Career Pathway Occu	upation	Level of Education
Construction	Arickmasons Carpet Installers Carpet Installers Carpet Installers Carpet Installers Carpet Installers Construction Laborers Construction Managers Continuous Mining Machine Operators Conveyor Operators and Tenders Carne and Tower Operators Cornevor Operators Co	Level of Education APP APP APP APP APP APP APP APP APP A

	 Structural Metal Fabricators and Fitters Tapers Terrazzo Workers and Finishers Tile and Stone Setters Underground Mining Machine Operators, All Other 	APP APP APP APP HSD, CRT
Design / Pre-Construction	 Architects, First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping workersExcept Landscape and Naval Architectural and Civil Drafters Civil Engineering Technologists and Technicians Civil Engineers Cost Estimators Geodetic Surveyors Interior Designers Landscape Architects Surveying and Mapping Technicians Surveyors Transportation Engineers 	MST CRT, DIP DIP DEG, MST APP, DIP, DEG DIP DIP, DEG DEG, MST DIP, DEG DEG, MST DIP DIP, DEG DEG DEG
Maintenance / Operations	 Boilermakers Commercial Drivers Construction and Related Workers, All Other Control and Valve Installers and Repairers. Except Mechanical Door Electrical Power-Line Installers and Repairers Elevator and Escalator Installers and Repairers Supervisors of Landscaping, Lawn Service, & Groundskeeping workers Grounds Maintenance Workers, All Other Heating, Air Conditioning, and Refrigeration Mechanics and Installers Helpers-Installation, Maintenance and Repair Workers Highway Maintenance Workers Landscaping and Groundskeeping Workers Mechanical Door Repairs Millwrights Refractory Materials Repairers, Except Brickmasons Septic Tank Servicers and Sewer Pipe Cleaners Solar Thermal Installers and Technicians Stationary Engineers and Boiler Operators Weatherization Installers and Technicians 	 APP HSD, CRT HSD, APP APP APP APP APP, CRT, DIP HSD, APP HSD, CRT HSD, CRT HSD, APP APP APP APP APP CRT, DIP CRT, DIP HSD, CRT

3. Arts, Audio/Video Technology and Communication

Description: The Arts, A/V technology and communications cluster may be the best career cluster for creative people. It includes journalists, actors, dancers, singers, radio announcers and behind the scenes workers.

Career Pathway	Occupation	Level of Education
Journalism & Broadcasting	 Audio and Video Technicians Broadcast Announcers and Radio Disc Jockeys Broadcast Technicians Camera Operators. Television. Video, and Film Editors Film and Video Editors Lighting Technicians Media and Communication Equipment Workers, All Other News Analysts, Reporters and Journalists Photographers Poets. Lyricists and Creative Writers Sound Engineering Technicians Technical Writers Writers and Authors 	CRT, DIP CRT, DIP CRT, DIP DIP CRT, DIP DEG, MST DIP, DEG HSD, CRT, DIP HSD, CRT, DIP DIP, DEG, MST HSD, CRT, DIP HSD, DIP, DEG CRT, DIP CRT, DIP CRT, DIP CRT, DIP HSD, DIP, DEG HSD, DIP, DEG
Performing Arts	 Actors Agents and Business Managers of Artists, Performers, and Athletes Choreographers Costume Attendants Dancers Disc Jockeys, Except Radio Entertainers and Performers, Sports and Related Workers, All Other Makeup Artists, Theatrical and Performance Media and Communications Workers, All Other Media Programming Directors Media Technical Directors/Managers Music Directors and Composers Musicians and Singers Producers and Directors Talent Directors 	HSD, DIP, DEG DIP, DEG DIP, DEG HSD, CRT, DIP HSD, CRT, DIP HSD, CRT, DIP HSD, CRT, DIP CRT, DIP, DEG CRT, DIP, DEG DIP, DEG DIP, DEG CRT, DIP, DEG DIP, DEG CRT, DIP, DEG DIP, DEG DIP, DEG DIP, DEG DIP, DEG DIP, DEG DIP, DEG
Printing Technology	 Desktop Publishers Prepress Technicians and Workers Print Binding and Finishing Workers Printing Press Operators Proofreaders and Copy Makers 	DEG, MST HSD, CRT, DIP HSD, CRT, DIP HSD, CRT, DIP CRT, DIP, DEG
Telecommunications	 <u>Telecommunications Equipment Installers and Repairers</u> <u>Telecommunications Line Installers and Repairers</u> 	APP APP
Visual Arts	 Art Directors Artists and Related Workers, All Other Commercial and Industrial Designers Craft Artists Designers, All Other Fashion Designers Fine Artists, Including Painters, Sculptors, and Illustrators Floral Designers Graphic Designers Set and Exhibit Designers Special Effects Artists and Animators 	DEG, MST HSD, CRT, DIP CRT, DIP, DEG HSD, CRT, DIP CRT, DIP, DEG HSD, DIP, DEG CRT, DIP, DEG

4. Business, Management and Administration

Description: The business, management and administration cluster includes business analysts, accountants, HR professionals and managers, and many entry- level positions, like receptionists, secretaries and typists. Students who are interested in this cluster have strong communication and business skills.

Career Pathway	Occupation	Level of Education
Administrative Support	 Bookkeeping. Accounting. and Auditing Clerks Correspondence Clerks Customer Service Representatives Data Entry Keyers Executive Secretaries and Executive Administrative Assistants File Clerks First-Line Supervisors of Office and Administrative Support Workers Human Resources Assistants, Except Payroll and Timekeeping Information and Record Clerks, All Other Library Assistants, Clerical Meter Readers, Utilities Office and Administrative Support Workers Order Clerks Payroll and Timekeeping Clerks Postal Service Clerks Postal Service Mail Carriers Postal Service Mail Sorters, Processors, and Processing Machine Operators Procurement Clerks Receptionists and Information Clerks Secretaries and Administrative Assistants, Except Legal, Medical and Executive Shipping, Receiving and Inventory Clerks Stockers and Order Fillers Switchboard operators, Including Answering Service Telephone Operators 	CRT, DIP HSD, CRT HSD, CRT CRT, DIP HSD, CRT CRT, DIP DIP, DEG CRT, DIP HSD
Business Information Management	Computer and Information Systems Managers	DIP, DEG, MST
General Management	 Chief Executives Chief Sustainability Officers Compliance Managers Entertainment and Recreation Managers, Except Gambling Operations Managers Investment Fund Manager Loss Prevention Managers Personal Service Managers Project Management Specialists Regulatory Affairs Managers Security Managers Supply Chain Managers Wind Energy Development Managers Wind Energy Operations Managers 	DEG, MST DEG, MST DEG, MST DIP, DEG DEG, MST DEG, MST DEG, MST DEG, MST DEG, MST DEG, MST DIP, DEG, MST
Human Resource Management	 Compensation and Benefits and Job Analysis Specialists Human Resources Managers Human Resources Specialists Labor Relations Specialists Training and Development Managers Training and Development Specialists 	 DIP, DEG DEG, MST DIP, DEG DIP, DEG DEG, MST DIP, DEG

Operations Management	Administrative Services Managers	DIR DEC MET
Operations Management	Administrative Services Managers	DIP, DEG, MST
	Biofuels Production Managers	DEG, MST, PHD
	Biomass Power Plant Managers	DIP, DEG
	Business Continuity Planners	DIP, DEG
	Business Operations Specialists, All Other	CRT, DIP, DEG
	Customs Brokers	DIP, DEG, MST
	Energy Auditors	DIP, DEG
	Facilities Managers	CRT, DIP, DEG
	Fundraisers	CRT, DIP, DEG
	Geothermal Production Managers	DIP, DEG, MST
	Hydroelectric Production Managers	DIP, DEG, MST
	Management Analysts	DIP, DEG, MST
	Meeting, Convention, and Event Planners	CRT, DIP, DEG
	Online Merchants	HSD, CRT, DIP
	Operations Research Analysts	DIP, DEG, MST
	Purchasing Managers	DIP, DEG
	Quality Control Systems Managers	DEG, MST
	Security Management Specialists	DIP, DEG, MST
	Sustainability Specialists	DIP, DEG, MST

5. Education and Training

Description: This cluster includes teacher, tutor and instructor roles. This area also employs counsellors, school psychologists and speech-language pathologists who offer and support students. Students who are interested in this field have strong leadership skills or want to act as role models for young people.

Career Pathway	Occupation	Level of Education
Administrations & Administrative Support	 Education Administrators, <u>Kindergarten</u>, <u>Elementary</u>, <u>Middle and Secondary School</u> Education Administrators, Post Secondary Education and Childcare Administrators, <u>Preschool and Daycare</u> Fitness and Wellness Coordinators 	DEG/PRF, MST, PHD DEG, MST, PHD DIP, DEG DIP, DEG, MST
Professional Support Services	 Archivists Curators Educational, Guidance, and Career Counselors and Advisors Instructional Coordinators Interpreters and Translators Librarians and Media Collections Specialists Library Technicians Museum Technicians and Conservators 	DEG, MST, PHD DIP, DEG DIP, DEG
Teaching & Training	 Adapted Physical Education Specialists Adult Basic Education, Adult Secondary Education English as a Second Language Instructors Instructors - Post Secondary - University Instructors - Post Secondary - College Career/Technical Education Teachers Coaches and Scouts Educational Instruction and Library Workers, All Other Elementary School Teachers Kindergarten Teachers Middle School Teachers Preschool Teachers Secondary School Teachers Special Education Teachers Substitute Teachers, Short-Term Teaching Assistant Tutors 	DEG, MST, PHD DEG, MST, PHD MST, PHD DEG, MST, PHD DEG, MST, PHD DEG, MST, PHD HSD, DIP, DEG CRT, DIP, DEG DEG/PRF, MST DEG/PRF, MST CRT, DIP, DEG DEG/PRF, MST CRT, DIP, DEG DEG/PRF, MST CRT, DIP, DEG CRT, DIP, DEG CRT, DIP, DEG CRT, DIP

6. Finance

Description: The finance cluster are auditor, financial analyst, treasurer, economist, bank worker, debt counsellor or insurance professional. Students who are interested in this field have strong math skills and the ability to explain difficult concepts to customers.

Career Pathway	Occupation	Level of Education
Accounting	 Accountants and Auditors AccountingTechnician 	• DEG • CRT
Banking Services	 Bill and Account Collectors Credit Analysts Credit Authorizers, Checkers, and Clerks Financial Clerks. All Other Loan Interviewers and Clerks Loan Officers Tellers Budget Analysts Financial Managers Tax Preparers Treasures and Controllers 	HSD, CRT, DIP CRT, DIP, DEG CRT, DIP, DEG CRT, DIP, DEG CRT, DIP, DEG DIP, DEG HSD, CRT, DIP DIP, DEG DIP, DEG DIP, DEG DIP, DEG DIP, DEG DIP, DEG
Business Finance	 Actuaries Claims Adjusters, Examiners, and Investigators Insurance Appraisers, Auto Damage Insurance Claims and Policy Processing Clerks Insurance Sales Agents Insurance Underwriters 	 DEG, MST DIP, DEG, MST DIP, DEG CRT, DIP, DEG CRT, DIP, DEG DEG, MST
Insurance	Brokerage Clerks Insurance Agent/broker Financial and Investment Analysts Financial Quantitative Analysts Financial Risk Specialists Fraud Examiners, Investigators and Analysts Personal Financial Advisors Securities, Commodities, and Financial Services Sales Agents	 CRT, DIP, DEG DIP, DEG

7. Government and Public Administration

Description: Jobs in the government and public administration career cluster involve planning, managing, and providing government legislative and administrative and regulatory services and related general purpose government services at the federal, state, and local levels.

Career Pathway	Occupation	Level of Education
Governance	 Aviation Inspectors Compliance Officers Coroners Environmental Compliance Inspectors Equal Opportunity Representatives and Officers Financial Examiners Government Property Inspectors and Investigators Legislators Regulatory Affairs Specialists Transportation Inspectors Transportation Vehicle, Equipment and System Inspectors 	 HSD, CRT, DIP DIP, DEG DEG & PRF DIP, DEG DIP, DEG DEG DIP, DEG HSD, DIP, DEG DEG DEG DIP, DEG APP, DIP, DEG
National Security	 Air Crew Members & Officers Aircraft Launch and Recovery Officers & Specialists Armored Assault Vehicle Crew Members & Officers Artillery and Missile Crew Members & Officers Command and Control Center Officers & Specialists Engineering Technologist and Technicians Infantry & Officers Special Forces & Officers Transportation Security Screeners 	DIP, DEG CRT, DIP, DEG HSD, DIP, DEG HSD, DIP, DEG CRT, DIP, DEG CRT, DIP HSD, CRT, DIP HSD, CRT, DIP CRT, DIP, DEG CRT, DIP, DEG CRT, DIP, DEG
Planning	Bioinformatics Technicians Statistical Assistants Urban and Regional Planners	CRT, DIP CRT, DIP, DEG DIP, DEG, MST
Public Management & Administration	 Court, Municipal, and License Clerks Eligibility Interviewers, Government Programs Emergency Management Directors Postmasters and Mail Superintendents 	CRT, DIP, DEG HSD, CRT, DIP DIP, DEG, MST DIP, DEG
Regulation	Agricultural Inspectors Construction and Building Inspectors Occupational Health and Safety Specialists & Technicians	DIP, DEG APP, DIP, DEG CRT, DIP, DEG
Revenue & Taxation	Appraisers and Assessors of Real Estate Appraisers of Personal and Business Property Tax Examiners and Collectors, and Revenue Agents	DIP, DEGDIP, DEGDIP, DEG

8. Health and Science

Description: Delivery of health care ranges from small private practice offices of physicians and dentists to busy hospitals with diverse career opportunities, from medevac units to cruise ships, from schools to sports arenas. Careers in this cluster promote health, wellness, and diagnosis, and treat injuries and diseases. Some work directly with patients while others conduct research or collect data and information.

Career Pathway	Occupation	Level of Education
Biotechnology Research & Development	Bioengineering and Biomedical Engineers Medical Scientists, Except Epidemiologists	DEG DEG, MST, PHD
Diagnostic Services	 Cardiovascular Technologists and Technicians Cytogenetic Technologists Cytotechnologist Diagnostic Medical Sonographers Epidemiologists Histology Technicians Histotecnologists Magnetic Resonance Imaging Technologists Medical and Clinical Laboratory Technicians & Technologists Medical Dosimetrists Neurodiagnostic Technologist Nuclear Medicine Technologist Ophthalmic Medical Technologists Radiologic Technologists and Technicians Veterinary Technologists and Technicians 	 DIP, DEG DIP, DEG DIP CRT, DIP DEG, MST CRT, DIP DIP, DEG CRT, DIP CRT, DIP DIP, DEG DIP, DEG DIP DIP, DEG DIP DIP CRT, DIP
Health Informatics	Medical Records Specialists Medical Secretaries and Administrative Assistants Medical Transcriptionists	CRT, DIP CRT, DIP CRT, DIP
Support Services	 Endoscopy Technicians Medical and Health Services Managers Medical Equipment Preparers Orderlies Pharmacy Aides Phlebotomists Speech-Language Pathology Assistants Veterinary Technical Assistants and Laboratory Animal Caretakers 	DIP DIP, DEG CRT, DIP HSD, CRT, DIP CRT, DIP CRT, DIP CRT, DIP DIP CRT
Therapeutic Services	 Acupuncturists Allergists and Immunologist Anesthesiologist Assistants Anesthesiologist Art Therapists Athletic Trainers Audiologist Cardiologists Chiropractors Dental Assistants Dental Hygienists Dentist Dermatologists Dietetic Technicians Dietitians and Nutritionists 	 DIP, DEG DEG, MST, PHD DIP DEG & PRF DEG, MST CRT, DIP, DEG DEG & PRF DEG & PRF DEG & PRF CRT, DIP DIP, DEG DEG & PRF CRT, DIP DEG & PRF CRT, DIP DEG & PRF DEG & PRF CRT, DIP DEG & PRF CRT, DIP DEG & PRF

Exercise Physiologists	DEG, MST, PHD
Genetic Counselors	DEG, MST, PHD
Health Information Technologists and Medical Registrars	DIP, DEG, MST
Hearing Aid Specialists	CRT, DIP
Health Care Aides	• CRT
Licensed Practical Nurses	• DIP
Medical Assistants	• CRT
Midwives	• DEG
Music Therapists	DEG, MST
Neurologists	DEG & PRF
Obstetricians and Gynecologists	DEG & PRF
Occupational Therapists	DEG & MST
Occupational Therapy Assistants	• DIP
Opticians	• DIP
Optometrists	DEG & PRF
Orthodontists	DEG & PRF
Orthopedic Surgeons	DEG & PRF
Orthoptists	DEG & MST
Orthotists and Prosthetists	DEG & MST
Pediatric Surgeons	DEG & PRF
Pediatricians	DEG & PRF
Pharmacists	DEG & PRF
Pharmacy Technicians	• DIP
Physical Therapist Assistants	• DIP
Physical Therapist	DEG & MST
Physicians	DEG & PRF
Podiatrists	DEG & PRF
Psychiatric Aides & Technicians	CRT & DIP
Psychiatrists	DEG & PRF
Radiation Therapists	• DIP
Radiologists	DEG & PRF
Recreational Therapists	DEG & MST
Registered Nurses	• DEG
Respiratory Therapists	DEG & MST
Speech-Language Pathologists	DEG & MST
• Surgeons	DEG & PRF
Surgical Assistants & Technologists	DIP, DEG
Urologists	DEG & PRF
Veterinarians	DEG & PRF

9. Hospitality and Tourism

Description: The hospitality and tourism cluster includes jobs you can do in restaurants, bars, tourist attractions, resorts, hotels and travel agencies. Students interested in this field have a passion for working with people, culture, arts and travel.

Career Pathway	Occupation	Level of Education
Lodging	 Baggage Porters and Bellhops Building Cleaning Workers, All Other Concierges First-Line Supervisors of Housekeeping and Janitorial Workers Hotel, Motel, and Resort Desk Clerks Janitors and Cleaners, Except Maids and Housekeeping Cleaners Lodging Managers Maids and Housekeeping Cleaners 	HSD, CRT, DIP HSD CRT, DIP HSD HSD
Recreation, Amusements & Attractions	 Amusement and Recreation Attendants Animal Trainers Athletes and Sports Competitors Entertainment Attendants and Related Workers, All Other First-Line Su[pervisors of Gambling Service Workers Gambling and Sports Book Writers and Runners Gambling Cage Workers Gambling Change Persons and Booth Cashiers Gambling Dealers Gambling Managers Gambling Service Workers, All Other Motion Pictures Projectionists Recreation Workers Umpires, Referees, and Other Sports Officials Ushers, Lobby Attendants, and Ticket Takers 	HSD HSD, CRT, DIP HSD HSD HSD, CRT, DIP
Restaurant & Food / Beverage Services	 Bakers Baristas Bartenders Chefs and Head Cooks Cooks Dining Room and Cafeteria Attendants and Bartender Helpers Dishwashers Fast Food and Counter Workers First-Line Supervisors of Food Preparation and Serving Workers Food Preparation and Serving Related Workers, All Other Food Preparation Workers Food Servers, Nonrestaurant Food Service Managers Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop Waiters and Waitresses 	APP, CRT, DIP HSD HSD, CRT APP, CRT, DIP HSD, APP HSD
Travel & Tourism	 Reservation and Transportation Ticket Agents and Travel Clerks Tour Guides and Escorts Travel Agents Travel Guides 	HSD, CRT, DIP CRT, DIP, DEG CRT, DIP CRT, DIP, DEG

10. <u>Human Services</u>

Description: The human services cluster is related to counseling and mental health. Students interested in this field have strong interpersonal and listening skills with patience and empathy towards others.

Career Pathway	Occupation	Level of Education
Consumer Services	Credit Counselors	• DEG
Counseling & Mental Health Services	 Clinical and Counseling Psychologists Marriage and Family Therapists Mental Health and Substance Abuse Social Workers Mental Health Counselors Neuropsychologists Psychologists, All Other Rehabilitation Counselors School Psychologists Substance Abuse and Behavioral Disorder Counselors 	DEG & MST, PHD DEG & MST, PHD DIP, DEG, MST DEG & MST, PHD DEG & MST, PHD DEG & MST, PHD DEG, MST, PHD DEG, MST, PHD DEG, MST, PHD DEG, MST, PHD
Early Childhood Development Services	Childcare WorkersNannies	HSD, CRT, DIP HSD, CRT, DIP
Family & Community Services	 Child, Family, and School Social Workers Clergy Community and Social Service Specialists, All Other Community Health Workers Directors, Religious Activities and Education Health Education Specialists HealthCare Social Workers Religious Workers, All Other Social and Community Service Managers Social Workers, All Other Social Workers, All Other 	 DIP, DEG, MST DIP, DEG, MST DIP, DEG DIP, DEG, MST DEG, MST, PHD DIP, DEG DIP, DEG, MST HSD, CRT, DIP DIP, DEG CRT, DIP DIP, DEG, MST
Patient Care Services	 Barbers Crematory Operators Embalmers Exercise Trainers and Group Fitness Instructors Funeral Attendants Funeral Home Managers Hairdressers, Hairstylists, and Cosmetologists Laundry and Dry-Cleaning Workers Locker Room, Coatroom, and Dressing Room Attendants Manicurists and Pedicurists Massage Therapists Morticians, Undertakers, and Funeral Arrangers Personal Care Aides & Service Workers Pressers, Textile, Garment, and Related Materials Residential Advisors Skinecare Specialists Spa Managers Tailors, Dressmakers, and Custom Sewers 	APP CRT CRT HSD, CRT, DIP HSD, CRT, DIP CRT, DIP, DEG APP, CRT, DIP HSD, CRT HSD CRT, DIP CRT, DIP CRT, DIP CRT, DIP CRT, DIP CRT, DIP HSD, CRT CRT, DIP HSD, CRT CRT, DIP HSD, CRT CRT, DIP CRT, DIP CRT, DIP CRT, DIP CRT, DIP CRT, DIP

11. Information Technology

Description: The information technology cluster is for web designers, aspiring developers, network administrators and computer support specialists. Students interested in this field have initiative, are self-directed learners, and enjoy being on the cutting edge of technology.

Career Pathway	Occupation	Level of Education
Information Support Services	 Business Intelligence Analysts Computer Systems Engineers/Architects Computer User Support Specialists Data Warehousing Specialists Document Management Specialists Geographic Information Systems Technologists and Technicians Information Technology Project Managers Search Marketing Strategists Software Quality Assurance Analysts and Testers Video Game Designers Web Administrators Web and Digital Interface Designers 	DEG, MST DEG, MST CRT, DIP, DEG CRT, DIP, DEG CRT, DIP, DEG DIP, DEG DIP, DEG, MST CRT, DIP, DEG CRT, DIP, DEG
Network Systems	 Computer Network Architects Computer Network Support Specialists Database Administrators Database Architects Information Security Analysts Network and Computer Systems Administrators Telecommunications Engineering Specialists 	DIP, DEG, MST CRT, DIP, DEG CRT, DIP, DEG DIP, DEG, MST CRT, DIP, DEG DIP, DEG, MST CRT, DIP, DEG CRT, DIP, DEG
Programming & Software Development	 Computer Programmers Computer System Analysts Health Informatics Specialists Software Developers 	 DEG, MST DIP, DEG, MST DIP, DEG, MST DEG, MST
Web & Digital Communications	Web Developers	• CRT, DIP, DEG

12. Law, Public Safety, Corrections and Security

Description: The Law, public safety, corrections and security cluster protects citizens. Students interested in this field are able to manage a fast-paced environment, are brave and have a strong desire to work with people and help/protect others.

Career Pathway	Occupation	Level of Education
Correctional Services	 Correctional Officers and Jailers First-Line Supervisors of Correctional Officers Probation Officers and Correctional Treatment Specialists 	DIP, DEG DIP, DEG DIP, DEG
Emergency & Fire Management Services	 Emergency Medical Technicians Fire Inspectors and Investigators Firefighters Forest Fire Inspectors and Prevention Specialists Paramedics Public Safety Telecommunicators 	CRT, DIP CRT, DIP, DEG CRT, DIP, DEG CRT, DIP, DEG DIP, DEG CRT, DIP
Law Enforcement Services	 Animal Control Workers Customs and Border Protection Officers Detectives and Criminal Investigators Fish and Game Wardens Forensic Science Technicians Intelligence Analysts Parking Enforcement Workers Police and Sheriff's Patrol Officers Police Identification and Records Officers Private Detectives and Investigators Transit and Railroad Police 	 HSD, CRT, DIP DIP, DEG DIP, DEG DIP, DEG DIP, DEG DEG, MST, PHD HSD, CRT, DIP DIP, DEG CRT, DIP HSD, CRT, DIP CRT, DIP CRT, DIP
Legal Services	 Administrative Law Judges, Adjudicators, and Hearing Officers Arbitrators, Mediators, and Conciliators Court Reporters and Simultaneous Captiomners Judges, Magistrate Judges, and Magistrates Judicial Law Clerks Lawyers Legal Secretaries and Administrative Assistants Legal Support Workers, All Other Paralegals and Legal Assistants Title Examiners, Abstractors, and Searchers 	 DEG & PRF DEG, PRF CRT, DIP DEG & PRF CRT, DIP DEG & PRF CRT, DIP CRT, DIP CRT, DIP CRT, DIP DIP, DEG CRT, DIP, DEG
Security & Protective Services	 Bailiffs Crossing Guards and Flaggers Gambling Surveillance Officers and Gambling Investigators Lifeguards, Ski Patrol, and Other Recreational Protective Service Workers Protective Service Workers, All Other Retail Loss Prevention Specialists School Bus Monitors Security Guards 	DIP, DEG HSD, CRT CRT, DIP, DEG HSD, CRT CRT, DIP HSD, CRT, DIP HSD, CRT HSD, CRT HSD, CRT, DIP

13. Manufacturing

Description: This cluster is focused on 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, and process engineering. Students entering these pathways should be interested in working with their hands, working with machinery and technology, and be OK with jobs that require repetition or little interaction with other people.

Career Pathway	Occupation	Level of Education
Maintenance, Installation & Repair	 Audiovisual Equipment Installers and Repairers Camera and Photographic Equipment Repairers Coin, Vending, and Amusement Machine Servicers and Repairers Computer, Automated Teller, and Office Machine Repairers Electric Motor, Power Tool, and Related Repairers Geothermal Technicians Home Appliance Repairers Industrial Machinery Mechanics Locksmiths and Safe Repairers Maintenance and Repair Workers Medical Appliance Technicians & Equipment Repairers Musical Instrument Repairers and Tuners Outdoor Power Equipment and Other Small Engine Mechanics Precision Instrument and Equipment Repairers, All Other Radio, Cellular, and Tower Equipment Installers and Repairers Security and Fire Alarm Systems Installers Watch and Clock Repairers Wind Turbine Service Technicians 	CRT, DIP CRT, DIP CRT, DIP CRT, DIP, DEG APP, CRT, DIP APP APP APP APP CRT, DIP CRT, DIP CRT, DIP CRT, DIP CRT, DIP CRT, DIP APP APP CRT, DIP APP APP APP, CRT, DIP APP APP, CRT, DIP APP APP, CRT, DIP APP, CRT, DIP APP, CRT, DIP
Manufacturing Product Process Development	 Aerospace Engineering and Operations Technologists and Technicians Automotive Engineering Technicians Calibration Technologists and Technicians Chemical Technicians Drafters, All Other Electrical and Electronic Engineering Technologists and Technicians Electrical and Electronics Drafters Electro-Mechanical and Mechatronics Technologists and Technicians Industrial Engineering Technologists and Technicians Mechanical Drafters Mechanical Engineering Technologists and Technicians Nanotechnology Engineering Technologist and Technicians Non-Destructive Testing Specialists Nuclear Monitoring Technicians Nuclear Technicians Photonics Technicians Purchasing Agents, Except Wholesale, Retail, and Farm Products Robotics Technicians 	DIP DIP DIP CRT, DIP CRT, DIP DIP DIP CRT, DIP DIP CRT, DIP DIP CRT, DIP DIP CRT, DIP
Production	 Adhesive Bonding Machine Operators and Tenders Aircraft Structure, Surfaces, Rigging, and Systems Assemblers Assemblers and Fabricators, All Other Biofeuls Processing Technicians Biomass Plant Technicians Butchers and Meat Cutters Cabinetmakers and Bench Carpenters Chemical Equipment Operators and Tenders Chemical Plant and System Operators Cleaning, Washing, and Metal Pickling Equipment Operators and Tenders 	 HSD, CRT, DIP CRT, DIP HSD, CRT, DIP DIP DIP CRT APP CRT, DIP CRT, DIP HSD, CRT, DIP

Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	HSD, CRT, DIP
Computer Numerically Controlled Tool Operators & Programmers	CRT, DIP, DEG
Cooling and Freezing Equipment Operators and Tenders	HSD, CRT, DIP
Crushing, Grinding, and Polishing Machine Setters, Operators, and Tenders	HSD, CRT, DIP
Cutting and Slicing Machine Setters, Operators, and Tenders	HSD, CRT, DIP
Cutting, Punching, and Press Machine Setters, Operators, and Tenders	HSD, CRT, DIP
Dental Laboratory Technicians	CRT, DIP, DEG
Drilling and Boring Machine Tool Setters, Operators, and Tenders	HSD, CRT, DIP
Electrical and Electronic Equipment Assemblers	HSD, CRT, DIP
Electromechanical Equipment Assemblers	CRT, DIP
Engine and Other Machine Assemblers	APP, CRT, DIP
Etchers and Engravers Febric and Apparel Patternmakers	HSD, CRT, DIP HSD, CRT, DIP
 Fabric and Apparel Patternmakers Fiberglass Laminators and Fabricators 	HSD, CRT, DIP HSD, CRT, DIP
 Fiberglass Laminators and Fabricators Food and Tobacco Roasting, Baking, and Drying Machine Operators and 	HSD, CRT, DIP
Tenders	• 113D, CK1, DIF
Food Batchmakers	HSD, CRT, DIP
Food Cooking Machine Operators and Tenders	HSD, CRT, DIP
Food Processing Workers, All Other	HSD, CRT, DIP
Forging Machine Setters, Operators, and Tenders, Metal and Plastic	HSD, CRT, DIP
Foundry Mold and Coremakers	HSD, CRT, DIP
Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	HSD, CRT, DIP
Furniture Finishers	APP, CRT, DIP
Gas Plant Operators	CRT, DIP, DEG
Gem and Diamond Workers	HSD, CRT, DIP
Glass Blowers, Molders, Benders, and Finishers	HSD, CRT, DIP
Grinding and Polishing Workers, Hand	HSD, CRT, DIP
Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and	HSD, CRT, DIP
Tenders, Metal and Plastic	
Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic	HSD, CRT, DIP
Helpers- Production Workers	HSD, CRT, DIP
Hydroelectric Plant Technicians	CRT, DIP
Jewelers and Precious Stone and Metal Workers Jethers and Transfer Metal and	HSD, CRT, DIP HSD, CRT, DIP
Lathe and Turning Machine Tool Setters, Operators, and Tenders, Metal and Plastic	HSD, CRT, DIP
Layout Workers, Metal and Plastic	HSD, CRT, DIP
Machine Feeders and Offbearers	HSD, CRT, DIP
Machinists	• APP
Meat. Poultry, and Fish Cutters and Trimmers	• CRT
Metal Workers and Plastic Workers, All Other	HSD, CRT, DIP
Metal-Refining Furnace Operators and Tenders	HSD, CRT, DIP
Milling and Planing Machine Setters, Operators, and Tenders, Metal and Plastic	HSD, CRT, DIP
Mixing and Blending Machine Setters, Operators, and Tenders	HSD, CRT, DIP
Model Makers, Metal and Plastic	HSD, CRT, DIP
Model Makers, Wood	HSD, CRT, DIP
Molders, Shapers, and Casters, Except Metal and Plastic	HSD, CRT, DIP
Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders,	HSD, CRT, DIP
Metal and Plastic	• D
Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	HSD, CRT, DIP
Nuclear Power Reactor Operators Ophthalmia Laboratory Technicians	CRT, DIP, DEG CRT, DIP, DEG
 Ophthalmic Laboratory Technicians Packaging and Filling Machine Operators and Tenders 	CRT, DIP, DEG HSD, CRT, DIP
 Packaging and Filling Machine Operators and Tenders Painting, Coating, and Decorating Workers 	HSD, CRT, DIP APP, CRT, DIP
Painting, Coating, and Decorating Workers Paper Goods Machine Setters, Operators, and Tenders	HSD, CRT, DIP
Patternmakers, Metal and Plastic	HSD, CRT, DIP
Patternmakers, Wood	HSD, CRT, DIP
Petroleum Pump System Operators, Refinery Operators, and Gaugers	HSD, CRT, DIP
Photographic Process Workers and Processing Machine Operators	HSD, CRT, DIP
Plant and System Operators, All Other	CRT, DIP, DEG

	 Plating Machine Setters, Operators, and Tenders, Metal and Plastic Potters, Manufacturing Pourers and Casters, Metal Power Distributors and Dispatchers Power Plant Operators Production Workers, All Other Recycling and Reclamation Workers Rolling Machine Setters, Operators and Tenders, Metal and Plastic Sawing Machine Setters, Operators, and Tenders, Wood Semiconductor Processing Technicians Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders Sewers, Hand Sewing Machine Operators Shoe and Leather Workers and Repairers Shoe Machine Operators and Tenders Slaughter and Meat Packers Stone Cutters and Masons Team Assemblers TextileMachine Operators and Tenders Timing Devices Assemblers and Adjusters Tire Builders Tool and Die Makers Tool Grinders, Filers, and Sharpeners Upholsterers Welders, Cutters, Solderers, and Brazers, Machine Setters, Operators, and Tenders Woodworking Machine Setters, Operators, and Tenders, Except Sawing 	 HSD, CRT, DIP HSD, CRT, DIP HSD, CRT, DIP CRT, DIP CRT, DIP, DEG HSD, CRT, DIP HSD, CRT, DIP HSD, CRT, DIP HSD, CRT, DIP CRT, DIP, DEG HSD, CRT, DIP CRT, DIP, DEG HSD, CRT, DIP
Quality Assurance	 Inspectors, Testers, Sorters, Samplers, and Weighers Production, Planning, and Expediting Clerks Weighers, Measurers, Checkers, and Samplers, Recordkeeping 	CRT, DIP, DEG HSD, CRT, DIP HSD, CRT, DIP

14. Marketing, Sales and Service

Description: The Marketing, Sales and Service Cluster encompasses advertising and marketing, buying and merchandising, distribution and logistics, e-Marketing, management and entrepreneurship, marketing communications and promotion, marketing information management and research, and professional sales. Students should be creative, able to work as part of a team, and be interested in communicating and working with people.

Career Pathway	Occupation	Level of Education
Marketing Communications	Public Relations Specialists	DIP, DEG
Marketing Management	 Advertising and Promotions Managers Fundraising Managers Marketing Managers Property, Real Estate, and Community Association Managers Public Relations Managers Sales Managers 	 DIP, DEG, MST DIP, DEG, MST DIP, DEG, MST DIP, DEG DIP, DEG, MST DIP, DEG, MST DIP, DEG, MST
Marketing Research	Market Research Analysts and Marketing Specialists	• DEG, MST
Merchandising	 Merchandise Displayers and Window Trimmers Models Wholesale and Retail Buyers, Except Farm Products 	HSD, CRT HSD HSD, CRT, DIP
Professional Sales	 Advertising Sale Agents Cashiers Counter and Retail Clerks Demonstrators and Product Promoters Door-to-Door Sales Workers, News and Street Vendors, and Related Workers Driver/Sales Workers Parts Salespersons Real Estate Brokers Real Estate Agents Retail Salesperson Sales and Related Workers, All Other Sales Engineers Solar Sales Representatives and Assessors Telemarketers 	DIP, DEG HSD HSD HSD HSD HSD HSD, CRT CRT, DIP, DEG CRT, DIP, DEG HSD

15. Science, Technology, Engineering and Mathematics

Description: Careers in the Science Technology Engineering and Math cluster relate to planning, managing and providing scientific research and professional and technical services such as laboratory and testing services, and research and development services. Students should be inquisitive, have strong analytical and mathematical skills, and be interested in conducting research or other projects, and always looking to learn more.

Career Pathway	Occupation	Level of Education
Engineering & Technology	 Aerospace Engineers Architectural and Engineering Managers Automotive Engineers Biofuels/Biodiesel Technology and Product Development Managers Chemical Engineers Computer Hardware Engineers Electrical Engineers Electronics Engineers, Except Computer Energy Engineers, Except Wind and Solar Engineers, All Other Fire-Prevention and Protection Engineers Fuel Cell Engineers Health and Safety Engineers, Except Mining Safety Engineers and Inspectors Human Factors Engineers and Ergonomists Industrial Engineers Manufacturing Engineers Marine Engineers and Naval Architects Materials Engineers Mechanical Engineers Mechanical Engineers Microsystems Engineers Microsystems Engineers Nuclear Engineers Nuclear Engineers Petroleum Engineers Petroleum Engineers Photonics Engineers Radio Frequency Identification Device Specialists Robotics Engineers Validation Engineers Validation Engineers Wind Energy Engineers Wind Energy Engineers 	DEG DEG, MST DEG
Science & Mathematics	 Astronomers Atmospheric and Space Scientists Biochemists and Biophysicists Biological Scientists, All Other Biostatisticians Cartographers and Photogrammetrists Chemists Climate Change Policy Analysts Clinical Data Managers Computer and Information Research Scientists Conservation Scientists Data Scientists Economists Environmental Economists Environmental Restoration Planners Environmental Scientists and Specialists, Including Health 	DEG, MST, PHD DEG, MST DEG, MST DEG, MST DEG, MST DEG, MST, PHD DEG, MST, PHD

Geneticists	DEG, MST, PHD
Geographers	DEG, MST, PHD
Geoscientists, Except Hydrologists and Geographers	DEG, MST, PHD
Historians	DEG, MST, PHD
Hydrologists	DEG, MST, PHD
Industrial Ecologists	DEG, MST, PHD
Life Scientists, All Other	DEG, MST, PHD
Life, Physical, and Social Science Technicians, All Other	DIP, DEG
Material Scientists	DEG, MST, PHD
Mathematical Scientists	DEG, MST, PHD
Mathematicians	DEG, MST, PHD
Microbiologists	DEG, MST, PHD
Molecular and Cellular Biologists	DEG, MST, PHD
Park Naturalists	DIP, DEG, MST
Physical Scientists, All Other	DEG, MST, PHD
Physicists	DEG, MST, PHD
Political Scientists	DEG, MST, PHD
Precision Agricultural Technicians	CRT, DIP, DEG
Quality Control Analysts	DIP, DEG
Range Managers	DIP, DEG
Remote Sensing Scientists and Technologists	 DEG, MST, PHD
Remote Sensing Technicians	CRT, DIP, DEG
Social Science Research Assistants	DIP, DEG
Social Scientists and Related Workers, All Other	DEG, MST, PHD
Sociologists	DEG, MST, PHD
Statisticians	DEG, MST, PHD
Survey Researchers	DIP, DEG, MST
Transportation Planners	DIP, DEG, MST

16. <u>Transportation</u>, <u>Distribution and Logistics</u>

Description: This Career Cluster is focused on planning, management, and movement of people, materials, and goods by road, pipeline, air, rail and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance. Students in these careers should be interested in how things work, looking for efficiencies and improvements, and working with machinery and technology.

Career Pathway	Occupation	Level of Education
Facility & Mobile Equipment Maintenance	 Aircraft Mechanics and Service Technicians Automotive and Warcraft Service Attendants Automotive Body and Related Repairers Automotive Glass Installers and Repairers Automotive Service Technicians and Mechanics Avionics Technicians Bicycle Repairers Bus and Truck Mechanics and Diesel Engine Specialists Cleaners of Vehicles and Equipment Electrical and Electronics Installers and Repairers, Transportation Equipment Electronics Equipment Installers and Repairers, Motor Vehicles Mobile Heavy Equipment Mechanics, Except Engines Motorboat Mechanics and Service Technicians Motorcycle Mechanics Rail Car Repairers Rail-Track Laying and Maintenance Equipment Operators Recreational Vehicle Service Technicians Signal and Track Switch Repairers Tire Repairers and Changers 	APP APP APP HSD, APP HSD APP HSD CRT, DIP APP APP CRT, DIP APP APP APP CRT, DIP APP CRT, DIP CRT, DIP CRT, DIP CRT, DIP CRT, DIP APP CRT, DIP
Logistics Planning & Management Services	 Dispatchers, Except Police, Fire, and Ambulance Logisticians Logistics Analysts Logistics Engineers Transportation, Storage, and Distribution Managers 	 CRT, DIP DEG DIP DEG DIP, DEG
Sales & Services	 Billing and Posting Clerks Cargo and Freight Agents Freight Forwarders Parking Attendants 	CRT, DIP HSD, CRT, DIP HSD, CRT, DIP HSD
Transportation Operations	 Aircraft Cargo Handling Supervisors Aircraft Service Attendants Airline Pilots, Copilots, and Flight Engineers Ambulance Drivers and Attendants, Except Emergency Medical Technicians Bridge and Lock Tenders Bus Drivers, School Bus Drivers, Transit and Intercity Captains, Mates, and Pilots of Water Vessels Commercial Pilots Couriers and Messengers Flight Attendants Gas Compressor and Gas Pumping Station Operators Heavy and Tractor-Trailer Truck Drivers Industrial Truck and Tractor Operators Laborers and Freight, Stock, and Material Movers, Hand Light Truck Drivers Locomotive Engineers 	HSD, CRT, DIP HSD, CRT, DIP DIP, DEG CRT, DIP CRT, DIP CRT, DIP HSD, CRT HSD, CRT DIP, DEG DIP, DEG HSD, CRT DIP, DEG CRT, DIP HSD, CRT HSD, CRT HSD, CRT HSD, CRT HSD, CRT, DIP HSD, CRT, DIP HSD, CRT, DIP HSD, CRT, DIP

	 Motor Vehicle Operators, All Other Motorboat Operators Packers and Packagers, Hand Passenger Attendants Pump Operators, Except Wellhead Pumpers Rail Transportation Workers, All Other Rail Yard Engineers, Donkey Operators, and Hostlers Railroad Brake, Signal, and Switch Operators and Locomotive Firers Railroad Conductors and Yardmasters Recycling Coordinators Sailors and Marine Oilers Ship Engineers Shuttle Drivers and Chauffeurs Subway and Streetcar Operators Tank Car, truck, and Ship Loaders Taxi Drivers Transportation Workers, All Other Wellhead Pumpers 	HSD, CRT HSD, CRT HSD, CRT HSD, CRT, DIP HSD, CRT HSD, CRT
Transportation Systems / Infrastructure Planning, Management & Regulation	 Air Traffic Controllers Airfield Operations Specialists Traffic Technicians 	CRT, DIP CRT, DIP, DEG CRT, DIP, DEG