HYDROGEN PRODUCTION SPECIALIST

Discover
Energy Careers NL

This infographic shows just a few of the many careers available in the local energy sector

HYDROGEN PRODUCTION SPECIALIST

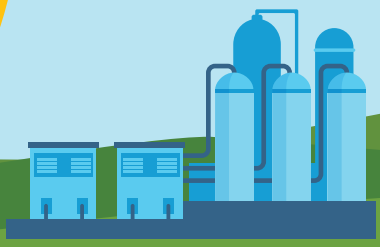
HYDROGEN PROCESS TECHNICIAN

HYDROGEN PLANT OPERATOR

HYDROGEN SYSTEMS ENGINEER

HYDROGEN TECHNICIAN GRADUATE





In this province green hydrogen will be produced using electricity from wind turbines and then converted to ammonia for transport to international markets.

HYDROGEN SPECIALISTS play a key role in producing, handling, and maintaining hydrogen systems and infrastructure. They may work in hydrogen production plants, research labs or industrial facilities.



COLLEGE OF THE NORTH ATLANTIC

- 2 YEAR PROGRAM
- PREPARES STUDENTS FOR PROVINCIAL CERTIFICATION IN POWER ENGINEERING 4TH CLASS
- EXIT OPTION UPON COMPLETION OF YEAR ONE



HYDROGEN TECHNICIAN PROGRAM

Students in the Hydrogen Technician program will gain strong technical skills related to the production of hydrogen-related processes. They receive safety training related to hydrogen, ammonia, fuel, and steam-based plant environments. Students will learn theory and practical skills necessary for a 4th Class Power Engineer.

DO YOU ENJOY ... MATH & SCIENCES
... HANDS-ON WORK
...ANALYTICAL THINKING

SKILLED TRADES: CONSTRUCTION

Discover
Energy Careers NL

This infographic shows just a few of the many careers available in the local energy sector

IRONWORKER

HEAVY EQUIPMENT OPERATOR

CRANE OPERATOR

CONCRETE FINISHER

STEAMFITTER/ PIPEFITTER

WELDER

SCAFFOLDER

CERTIFIED JOURNEYPERSON

4th YEAR APPRENTICE

3rd YEAR APPRENTICE

2nd YEAR APPRENTICE

TRAINING PROGRAM
7-12 MONTHS

CONSTRUCTION TRADES

focus on building and maintaining physical structures like roadways, buildings, hydroelectric dams or wind farms.

The work typically takes place on construction or industrial sites and likely involves working outdoors.

APPRENTICESHIP TRAINING

Learn from a MASTER TRADESPERSON

$$$

Get PAID during Training

on-the-job	80%
classroom	20%

Once the required training is complete, write a certification exam to become a JOURNEYPERSON.

DO YOU ENJOY
... HANDS-ON LEARNING
... PHYSICAL ACTIVITY
... WORKING OUTSIDE
?

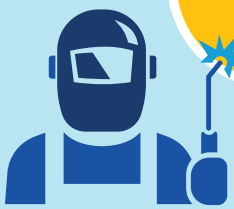
SKILLED TRADES: INDUSTRIAL

Discover
Energy Careers NL

This infographic shows just a few of the many careers available in the local energy sector









INDUSTRIAL ELECTRICIAN

BOILERMAKER

STEAMFITTER / PIPEFITTER

WELDER

INSTRUMENTATION TECHNICIAN

MILLWRIGHT

MACHINIST

CERTIFIED JOURNEYPERSON

4th YEAR APPRENTICE

3rd YEAR APPRENTICE

2nd YEAR APPRENTICE

TRAINING PROGRAM
7-12 MONTHS

INDUSTRIAL TRADES focus on maintenance and repair of machinery and equipment in industrial settings like hydroelectric plants or oil production platforms.

The work usually takes place inside facilities, compared to the construction trades which typically takes place outside.



APPRENTICESHIP TRAINING

Learn from a MASTER TRADESPERSON

$$$

Get PAID during Training

on-the-job	80%
classroom	20%

Once the required training is complete, write a certification exam to become a JOURNEYPERSON.

DO YOU ENJOY
... HANDS-ON LEARNING
... PHYSICAL ACTIVITY
... WORKING WITH TOOLS

SKILLED TRADES: MYTHS AND REALITIES

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Energy Careers NL

MYTH VS REALITY

MYTH		REALITY
Skilled trades are for students who don't excel academically.	1	Trades require problem-solving, technical skills, math, and science knowledge. Many trades also require precision, creativity, and strong communication skills.
Skilled trades are unsafe.	2	Safety is a top priority in all skilled trades. Tradespeople receive rigorous health and safety training, and strict regulations are in place to protect all workers.
Skilled trades jobs don't pay well or offer long-term stability.	3	Many skilled trades offer excellent pay, benefits, and job security. Electricians, Welders and Instrumentation Technicians are just a few examples of careers with high salaries and opportunities for advancement.
Skilled trades jobs are dirty and noisy.	4	Working in the skilled trades does not necessarily mean working outdoors or getting your hands dirty. Many skilled tradespeople work with sophisticated equipment and technology.
Skilled trades jobs are for men only.	5	The notion that skilled trades are only for men is very outdated. The skilled trades require a range of skills and aptitudes that are not gender specific.
Skilled trades don't require technology knowledge and aptitude.	6	Modern skilled trades often involve advanced technology and require proficiency with digital tools, machinery, and software. Tradespeople must continuously update their skills to keep pace with technological advancements.
Skilled trades are physically demanding.	7	While some trades involve physical labor, many others focus on precision, craftsmanship, and technical skills. Modern ergonomic tools and safety measures have made physical tasks more manageable.

WIND TURBINE SPECIALIST

Discover
Energy Careers NL

This infographic shows just a few of the many careers available in the local energy sector

WIND SERVICES TECHNICIAN

WIND TURBINE TECHNICIAN

WIND TECHNICIAN

WIND TURBINE GRADUATE

OFFSHORE WIND INSTALLATION TECHNICIAN

Generation of electricity using wind turbines has been commonplace across Canada and globally for decades; however, it is a relatively new endeavor in this province.

WIND TURBINE SPECIALISTS play a key role installing, maintaining, troubleshooting, and repairing wind turbines.

COLLEGE OF THE NORTH ATLANTIC

- 1 YEAR CERTIFICATE PROGRAM
- FOCUS ON WIND TURBINE SYSTEMS AND SAFETY
- WORK PLACEMENT (4 WEEKS)

WIND TURBINE PROGRAM

Students in the Wind Turbine program learn about electrical, mechanical and hydraulic systems and controls.

Students apply classroom theory in a wind turbine facility and receive critical safety training that includes certification in:

- Fall Protection
- High Angle Rescue
- Confined Spaces

DO YOU ENJOY

... MATH & SCIENCES
... HANDS-ON WORK
... ANALYTICAL THINKING
... WORKING OUTSIDE

BUSINESS ADMINISTRATION

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Energy Careers NL

This infographic shows just a few of the many careers available in the local energy sector

BUSINESS STUDIES GRADUATE

INFORMATION SYSTEMS AND OPERATIONS
- Industrial Benefit Analyst
- Business Analyst
- Operations Advisor

FINANCE AND ACCOUNTING
- Financial Analyst
- Finance Manager
- Accountant

SUPPLY CHAIN MANAGEMENT
- Logistics Coordinator
- Contracts Administrator
- Procurement Specialist

PUBLIC RELATIONS AND MARKETING
- Advertising
- Communications Advisor
- Public Relations Advisor

HUMAN RESOURCES
- Training Specialist
- Human Resources Advisor
- Labour Relations Specialist

MEMORIAL UNIVERSITY

BACHELOR OF COMMERCE CO-OP
(45 COURSES)

BACHELOR OF COMMERCE
(40 COURSES)

DIPLOMA IN BUSINESS ADMINISTRATION
(CERTIFICATE + 10 COURSES)

CERTIFICATE IN BUSINESS ADMINISTRATION
(10 COURSES)

COLLEGE OF THE NORTH ATLANTIC

DIPLOMA IN BUSINESS MANAGEMENT
(3 YEARS)

DIPLOMA IN BUSINESS STUDIES
(2 YEARS)





DO YOU EXCEL IN

... WORKING WITH PEOPLE
...ANALYTICAL THINKING

ARE YOU

... DETAIL ORIENTED
... A GOOD COMMUNICATOR

EARTH SCIENCES

Discover
Energy Careers NL

This infographic shows just a few of the many careers available in the local energy sector

B. SC. (EARTH SCIENCES) GRADUATE

APPLIED GEOPHYSICS STREAM
- Geophysicist
- Petrophysicist
- Seismologist

BEDROCK, CRUST AND MANTLE STREAM
- Geochemist
- Mineralogist
- Exploration Geologist

ENVIRONMENTAL GEOSCIENCE STREAM
- G.I.S. Specialist
- Environmental Geologist

SURFACE PROCESSES & SEDIMENTARY BASINS STREAM
- Reservoir Manager
- Sedimentologist
- Stratigrapher

COMPREHENSIVE STREAM
- Geologist
- Policy Analyst





MEMORIAL UNIVERSITY

FACULTY OF SCIENCE
EARTH SCIENCE MAJOR

FIVE SPECIALIZATION STREAMS

EARTH SCIENCES AT MUN

- Common courses years 1-2
- Specialization in years 3-4
- Honours program available
- Field courses available

EARTH SCIENTISTS analyze geo-data to support sustainable energy development while minimizing environmental impact. Today's geoscientists may engage in traditional fieldwork and use high-tech tools like satellite imagery and laser microscopes.

EARTH SCIENTISTS in the energy sector work closely with engineers, technologists, and environmental consultants.



DO YOU ENJOY ... MATH & SCIENCE
... ANALYTICAL THINKING
... TRAVEL & WORKING OUTSIDE

ENGINEERING

Discover
Energy Careers NL

This infographic shows just a few of the many careers available in the local energy sector

BACHELOR OF ENGINEERING GRADUATE

- **MECHATRONICS ENGINEER**
  - Robotics Engineer
  - MEMS Engineer
- **ELECTRICAL ENGINEER**
  - Instrumentation Engineer
  - Telecommunications Engineer
- **COMPUTER ENGINEER**
  - Software Engineer
  - Network Engineer
- **OCEAN AND NAVAL ARCHITECTURAL ENGINEER**
  - Subsea Engineer
  - Structural Engineer
- **PROCESS ENGINEER**
  - Field Engineer
  - Mud Logging Engineer
- **CIVIL ENGINEER**
  - Project Engineer
  - Structural Engineer
- **MECHANICAL ENGINEER**
  - Maintenance Engineer
  - Materials Engineer

MEMORIAL UNIVERSITY

FACULTY OF ENGINEERING

- 8 ACADEMIC TERMS
- 4 PAID WORK TERMS

ENGINEERS apply math and science principles to solve real-world problems. The work of an engineer can vary depending on their field of specialization.

Responsibilities of engineers in the energy sector include:

- Designing and planning
- Problem-solving and troubleshooting
- Research and development
- Testing and quality assurance
- Project management

ENGINEERING AT MUN

- Common 1st year
- Specialization in years 2-5
- Work terms provide real industry experience
- Energy electives available

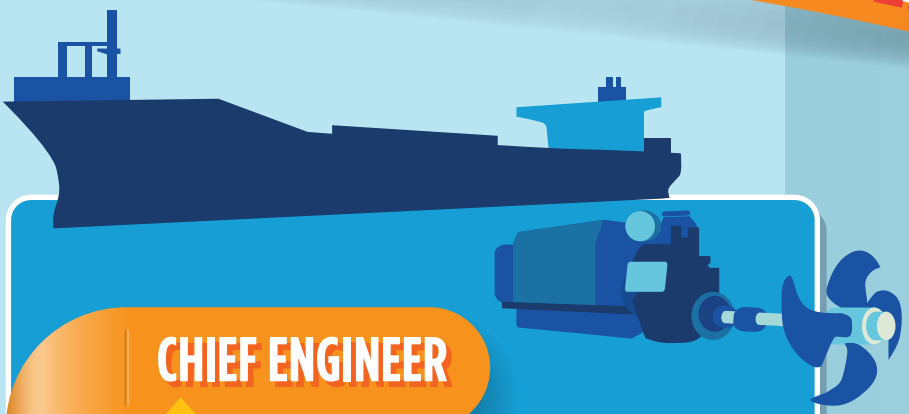
DO YOU EXCEL IN

... ADVANCED MATH
... CHEMISTRY
... PHYSICS
...ANALYTICAL THINKING
... PROBLEM SOLVING

MARINE ENGINEERING OFFICERS

Discover
Energy Careers NL

This infographic shows just a few of the many careers available in the local energy sector



CHIEF ENGINEER
First Class Engineering Certificate

SECOND ENGINEER
Second Class Engineering Certificate

THIRD ENGINEER
Third Class Engineering Certificate

FOURTH ENGINEER
Fourth Class Engineering Certificate

MARINE ENGINEERING
MARINE INSTITUTE OF MEMORIAL UNIVERSITY
www.mi.mun.ca

FOUR YEAR PROGRAM
- INCLUDING 180 DAYS AT SEA
OVER 3 PAID WORK TERMS

MARINE ENGINEERING OFFICERS ARE...

Responsible for all mechanical operations of vessels.

These systems include
- Propulsion
- Water Treatment
- Electrical Generation
- Pumping and Transfer
- Crane and Cargo
- Hydraulic
- Refrigeration



THE GOVERNMENT OF CANADA
(TRANSPORT CANADA)

Develops and enforces certification standards to ensure the safe operation of marine vessels in Canada.



ARE YOU ... MECHANICAL
... A PROBLEM SOLVER

DO YOU ENJOY ... BEING ON THE OCEAN
... COMPLEX MACHINERY

MARINE NAVIGATION OFFICERS

Discover
Energy Careers NL

This infographic shows just a few of the many careers available in the local energy sector



MASTER MARINER
Captain of the Ship

Master Mariner Certificate

FIRST MATE

Chief Mate - Unlimited Certificate

SECOND MATE

Chief Mate - Near Coastal Certificate

THIRD MATE

Watchkeeping Mate Certificate

NAUTICAL SCIENCE

MARINE INSTITUTE OF MEMORIAL UNIVERSITY
www.mi.mun.ca

FOUR YEAR PROGRAM
- INCLUDING 360 DAYS AT SEA OVER 3 PAID WORK TERMS

MARINE NAVIGATION OFFICERS ARE...

Responsible for the safety of the ship and crew. They must safely navigate the vessel and coordinate the vessel's operations.

INCLUDING:
- Cargo Loading
- Cargo Discharging
- Deck Maintenance

THE GOVERNMENT OF CANADA
(TRANSPORT CANADA)

Develops and enforces certification standards to ensure the safe operation of marine vessels.



ARE YOU ... A LEADER
... A GOOD COMMUNICATOR

DO YOU ENJOY ... BEING ON THE OCEAN
... MATH AND SCIENCES

OFFSHORE DRILLING SPECIALISTS

Discover
Energy Careers NL

This infographic shows just a few of the many careers available in the local energy sector



TOOLPUSHER

DRILLER

DERRICKHAND

ROUGHNECK
FLOORHAND

ROUSTABOUT

OFFSHORE DRILLING FLOOR WORKERS

Are responsible for operating and maintaining drilling materials and equipment on the rig.

Formal training is not required; however, completion of a two or three year college program in a technical field is considered an asset. Standard practice is for workers to gain training and qualifications through on-the-job experience.

Workers generally move from the entry-level positions of Roustabout and Roughneck through the ranks to Assistant Derrickhand and Derrickhand, into the senior positions of Driller and Toolpusher.



WORKER STRENGTHS

- Completion of a 2 – 3 year College Program in a Technical Field
- Hand-Eye Coordination
- Physical Strength
- Ability to Follow Directions and Safety Practices



DO YOU ENJOY ...

...WORKING OUTSIDE
...PHYSICAL ACTIVITY
...MECHANICAL ACTIVITY
...WORKING AS A TEAM



OFFSHORE WELL SERVICES

Discover
Energy Careers NL

This infographic shows just a few of the many careers available in the local energy sector

COMPLETIONS SPECIALIST

COIL TUBING SPECIALIST

DRILLING FLUIDS SPECIALIST

PETROLEUM ENGINEERING TECHNOLOGY GRADUATE

CEMENTING SPECIALIST

WIRELINE SPECIALIST

WELL SERVICES SPECIALISTS are an important part of the drilling and production team.

Examples of their job duties include monitoring mud flows and mixing fluid chemicals required by the well, and operating hydraulic systems to pump chemicals or cement into the well to ensure normal operation.

COLLEGE OF THE NORTH ATLANTIC

- COMMON FIRST YEAR
- PETROLEUM SPECIALIZATION IN YEARS 2-3
- WORK TERM INCLUDED

PETROLEUM ENGINEERING TECHNOLOGY PROGRAM

Students gain knowledge and skills related to interpreting data, operating and maintaining equipment, operating and maintaining equipment, and assisting with many aspects of OIL AND GAS PRODUCTION.







DO YOU ENJOY ... MATH & SCIENCES
... HANDS ON WORK
...ANALYTICAL THINKING

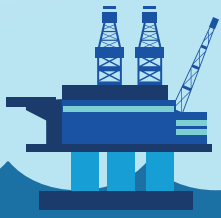
SKILLED TRADES

Discover
Energy Careers NL

This infographic shows just a few of the many careers available in the local energy sector







RED SEAL JOURNEYPERSON



The Red Seal program is the Canadian standard of excellence for skilled trades.

A Red Seal endorsement opens the door to job opportunities, higher wages, and is recognized in ALL provinces.

OCCUPATIONS TO CONSIDER

- Boilermaker
- Cook
- Concrete Finisher
- Crane Operator
- Heavy Equipment Operator
- Industrial Electrician
- Instrumentation Technician
- Insulator
- Ironworker
- Machinist
- Millwright
- Pipefitter
- Powerline Technician
- Scaffolder
- Welder

4th YEAR APPRENTICE

3rd YEAR APPRENTICE

2nd YEAR APPRENTICE



TRAINING PROGRAM
7-12 MONTHS



APPRENTICESHIP TRAINING

Learn from a MASTER TRADESPERSON

$$$

Get PAID during Training

on-the-job	80%
classroom	20%

Once the required training is complete, write a certification exam to become a JOURNEYPERSON.

DO YOU ENJOY

... HANDS-ON LEARNING
... PHYSICAL ACTIVITY
... WORKING OUTSIDE



SPECIALTY SERVICES

Discover
Energy Careers NL

This infographic shows just a few of the many careers available in the local energy sector

COLLEGE OR UNIVERSITY GRADUATE

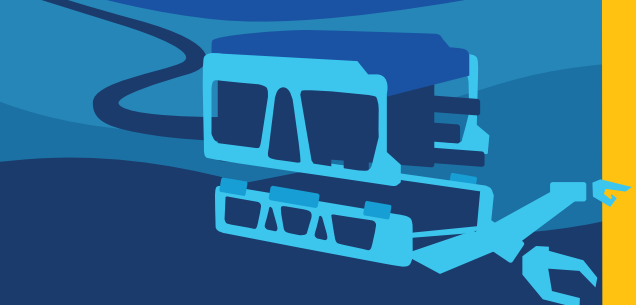
- **SAFETY**
  - Occupational Health and Safety Advisor
  - Safety Trainer
- **QUALITY INSPECTION**
  - Non-Destructive Testing Technician
  - Welding Inspector
- **UNDERWATER VEHICLES**
  - Remote Operated Vehicle Pilot
  - Remote Operated Vehicle Technician
- **HEALTH AND MEDICAL**
  - Paramedic
  - On-call Medical Doctor
- **AIR TRANSPORTATION**
  - Helicopter Pilot
  - Aircraft Maintenance Engineer
- **ENVIRONMENT**
  - Marine Biologist
  - Environmental Advisor

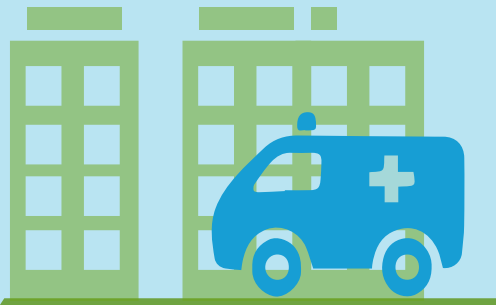
POST-SECONDARY TRAINING REQUIRED

- 1 YEAR COLLEGE CERTIFICATE
- 2 OR 3 YEAR COLLEGE DIPLOMA
- 4+ YEAR UNIVERSITY DEGREE











TECHNOLOGISTS

Discover
Energy Careers NL

This infographic shows just a few of the many careers available in the local energy sector

ENGINEERING TECHNOLOGY GRADUATE

- **ELECTRICAL ENGINEERING TECHNOLOGY**
  - Electrical Technologist
  - Central Control Room Specialist
- **CIVIL ENGINEERING TECHNOLOGY**
  - CAD Technologist
  - Structural Designer
- **MECHANICAL ENGINEERING TECHNOLOGY**
  - Mechanical Technologist
  - Structural Designer
- **INSTRUMENTATION ENGINEERING TECHNOLOGY**
  - Instrumentation Technologist
  - Central Control Room Specialist
- **PETROLEUM ENGINEERING TECHNOLOGY**
  - Drilling Fluid Specialist
  - Completions Specialist
  - Cementing Specialist
- **CHEMICAL PROCESS ENGINEERING TECHNOLOGY**
  - Laboratory Technologist
  - Process Operator
- **MARINE ENGINEERING SYSTEMS DESIGN**
  - Marine Systems Designer
  - Piping Designer

Workers may become highly specialized in one specific discipline OR may work in a variety of fields with a transferable skill set.

After two years work experience individuals may be eligible to become certified as a Professional Technologist (P. Tech.).

3 YEAR ENGINEERING TECHNOLOGY COLLEGE PROGRAMS

COLLEGE OF THE NORTH ATLANTIC
www.cna.nl.ca

MARINE INSTITUTE
www.mi.mun.ca

ENGINEERING TECHNOLOGY TRAINING

- Common 1st year
- Specialization in years 2-3
- Work term options
- Small class size





DO YOU ENJOY
... MATH
... SCIENCES
... PROBLEM SOLVING
...HANDS-ON WORK

