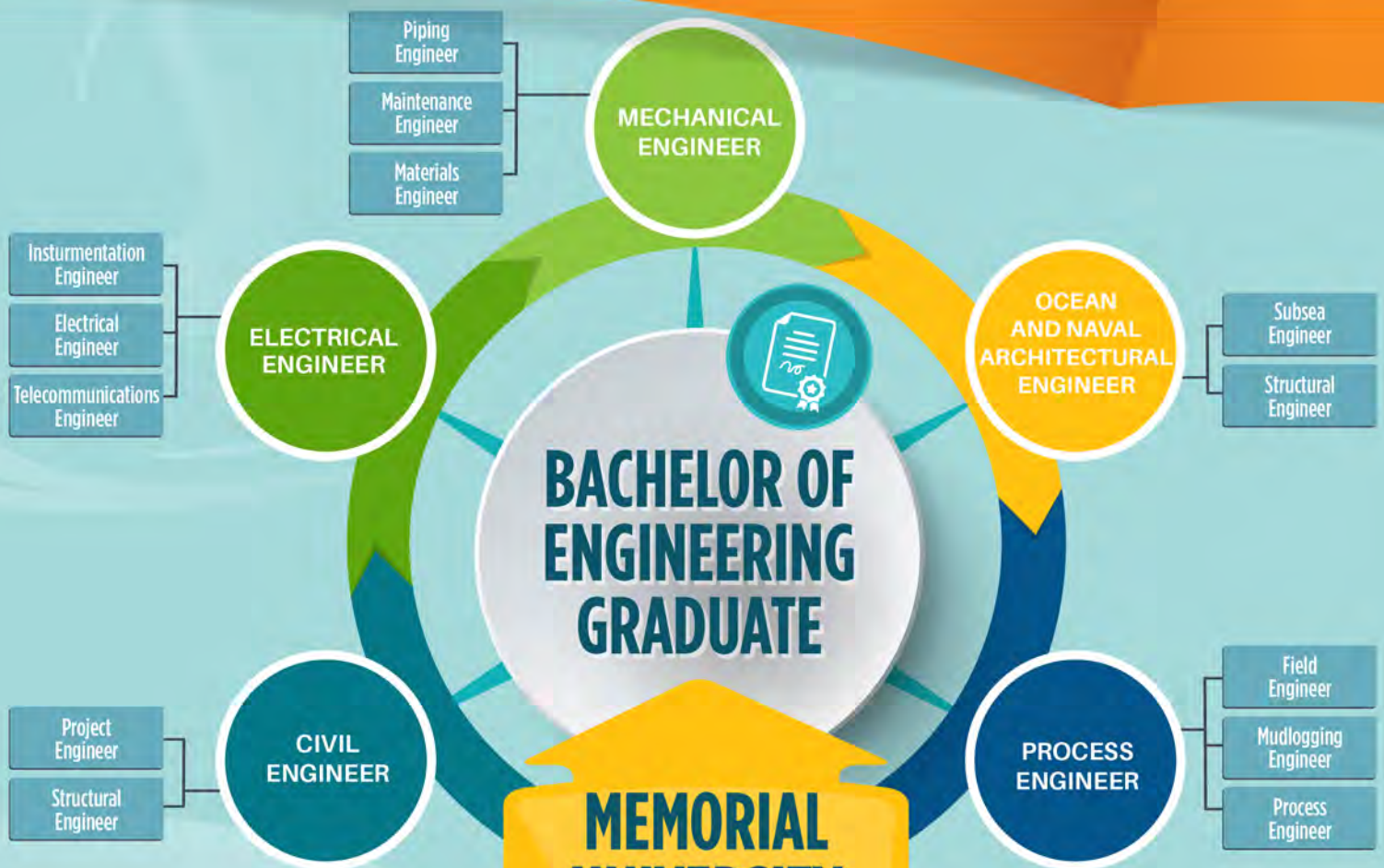


# ENGINEERING



## MEMORIAL UNIVERSITY

### FACULTY OF ENGINEERING

- 8 ACADEMIC TERMS
- 4 PAID WORK TERMS



DO YOU EXCEL IN

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

### ENGINEERING AT M.U.N.

- Common 1<sup>st</sup> year
- Specialization in years 2-5
- Work terms provide real industry experience
- Oil and Gas electives available

The **DUTIES** of an **ENGINEER** may involve designing, constructing, maintaining, and operating industrial facilities or plants.

An engineer in the oil and gas industry may become highly specialized in one area, or work in a variety of fields including design, project planning and field engineering.

# BUSINESS ADMINISTRATION



## UNIVERSITY

BACHELOR OF COMMERCE  
(5 YEARS)  
BACHELOR OF BUSINESS  
ADMINISTRATION  
(4 YEARS)  
DIPLOMA OF BUSINESS  
ADMINISTRATION  
(2 YEARS)

## COLLEGE

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



This infographic shows just a few of the many Business Administration careers available in the local oil & gas industry.



# MARINE ENGINEERING OFFICERS

## 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](http://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

## MASTER MARINER

Captain of the Ship

Master Mariner Certificate

## FIRST MATE

Chief Mate- Unlimited Certificate

## SECOND MATE

Chief Mate - New Coastal Certificate

## THIRD MATE

Watchkeeping Mate Certificate

## NAUTICAL SCIENCE

MARINE INSTITUTE OF  
MEMORIAL UNIVERSITY

[www.mi.mun.ca](http://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

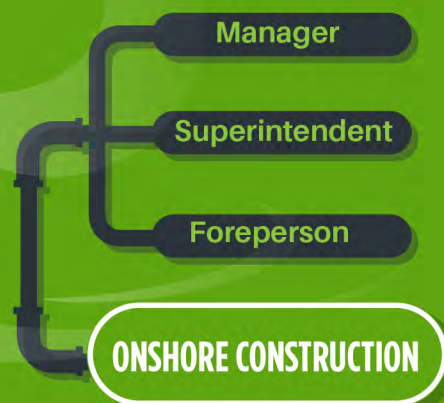
DO YOU ENJOY ... BEING ON THE OCEAN

... MATH AND SCIENCES





# SKILLED TRADES



## OCCUPATIONS TO CONSIDER ✓

Industrial Mechanic  
Industrial Electrician  
Instrumentation Technician  
Crane Operator  
Cook  
Pipefitter  
Insulator  
Rigger  
Scaffolder  
Welder  
Ironworker  
Sheet Metal Worker



**4<sup>th</sup> YEAR APPRENTICE**

**3<sup>rd</sup> YEAR APPRENTICE**

**2<sup>nd</sup> YEAR APPRENTICE**

**TRAINING PROGRAM**  
7-12 MONTHS

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



## APPRENTICESHIP TRAINING

Learn from a  
**MASTER TRADESPERSON**

**\$\$\$**

Get PAID during Training

on-the-job  80%  
classroom  20%

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



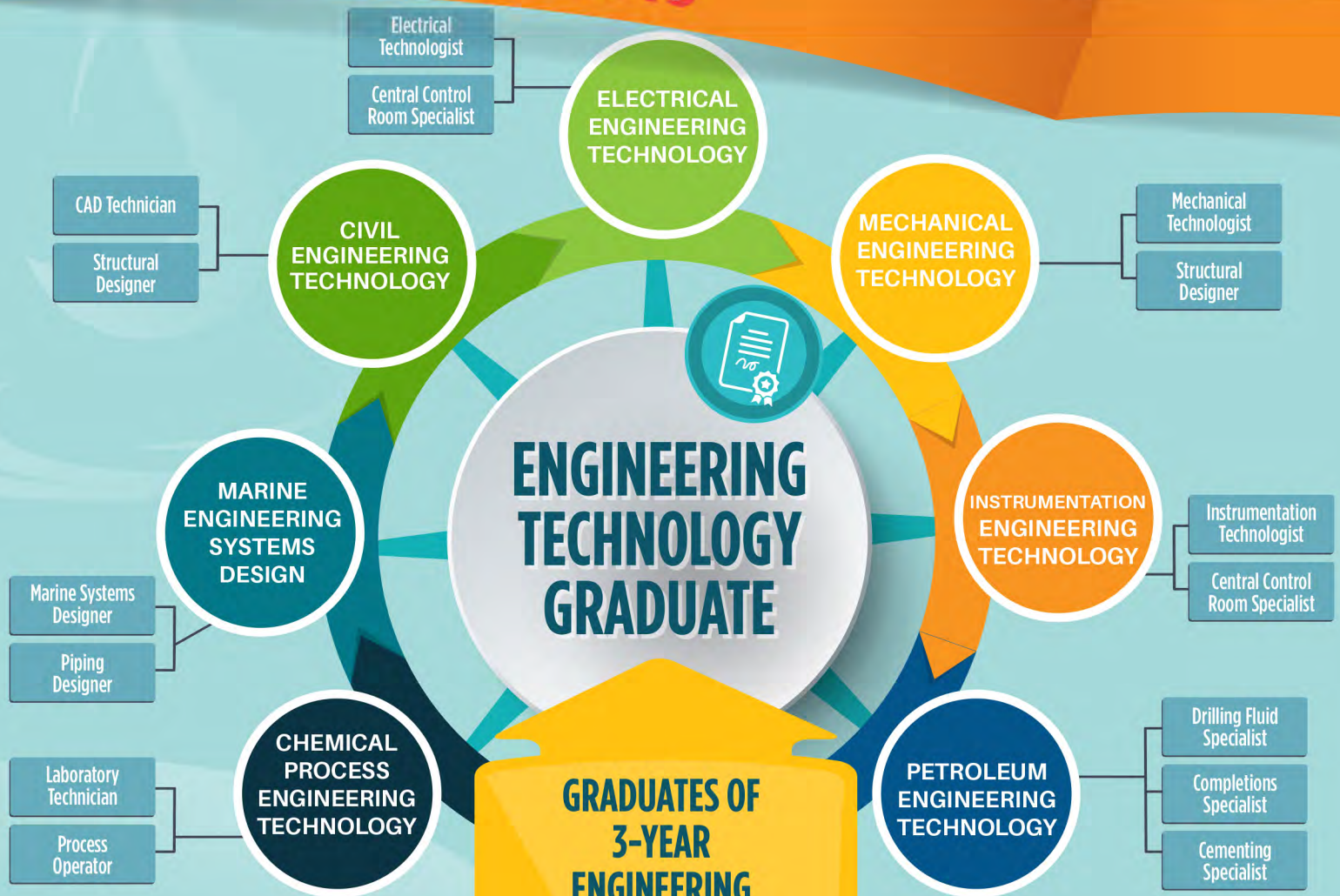
# SPECIALITY SERVICES



This infographic shows just a few of the many Specialty Services careers available in the local oil & gas industry.



# TECHNOLOGISTS



## GRADUATES OF 3-YEAR ENGINEERING TECHNOLOGY COLLEGE PROGRAMS

**COLLEGE OF THE NORTH ATLANTIC**  
[www.cna.nl.ca](http://www.cna.nl.ca)

**MARINE INSTITUTE**  
[www.mi.mun.ca](http://www.mi.mun.ca)

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.).

## ENGINEERING TECHNOLOGY TRAINING

Common 1<sup>st</sup> year  
Specialization in years 2-3

Work term options

Small class size

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



# WELL SERVICES SPECIALISTS

COIL TUBING  
SPECIALIST

COMPLETIONS  
SPECIALIST

DRILLING  
FLUIDS  
SPECIALIST

CEMENTING  
SPECIALIST

**PETROLEUM  
ENGINEERING  
TECHNOLOGY  
GRADUATE**

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
- 12 WEEK WORK TERM

## PETROLEUM ENGINEERING TECHNOLOGY PROGRAM

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

**DO YOU ENJOY**

... MATH & SCIENCE  
... HANDS ON WORK  
... ANALYTICAL THINKING



# DRILLING OCCUPATIONS



TOOL PUSHER

↑

DRILLER

↑

DERRICKHAND

↑

ROUGHNECK  
FLOORHAND

## 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

## DRILLING OPERATION POSITIONS


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

People with a two or three-year college program in a technical program (such as Mechanical or Civil Engineering) have a better chance of getting hired as part of a drilling rig crew. As with all offshore jobs, there are required safety courses that need to be completed to work in this field.

Workers gain training and qualifications through on-the-job experience and can then progress to jobs with more responsibilities, and better pay.



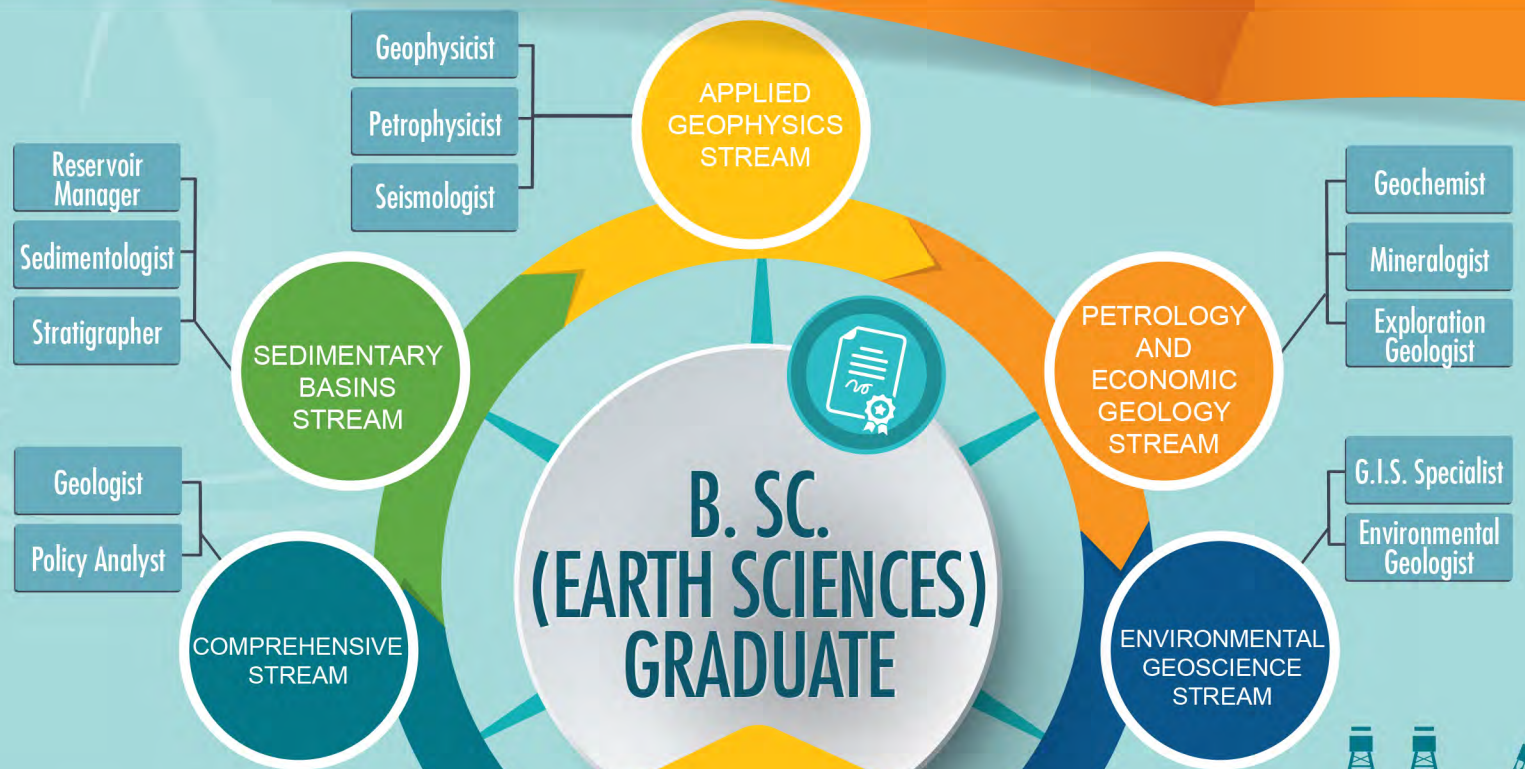
DO YOU ENJOY ...WORKING OUTSIDE  
...PHYSICAL ACTIVITY  
...MECHANICAL ACTIVITY  
...WORKING AS PART OF A TEAM



This infographic shows just a few of the many Drilling careers available in the local oil & gas industry.



# EARTH SCIENCES



## MEMORIAL UNIVERSITY

FACULTY OF SCIENCE  
EARTH SCIENCE MAJOR

FIVE SPECIALIZATION  
STREAMS



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

### EARTH SCIENCES AT M.U.N.

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

**EARTH SCIENTISTS** in the oil and gas industry work closely with engineering and drilling teams.

**HIGH SCHOOL STUDENTS** who achieved greater than 80% in Earth Systems 3209 are eligible to receive credit for Earth Sciences 1000 at M.U.N.