



METEOROLOGY, ATMOSPHERIC SCIENCES AND HYDROLOGY:

ACADEMIC FIELDS THAT CAN LEAD TO A FASCINATING CAREER!



WHY MIGHT YOU BE INTERESTED?

- Do you enjoy the natural sciences, math, physics and computer science?
- Are you interested in nature and natural phenomena, like how clouds and thunderstorms form?
- Are you concerned about the effects of climate change on the weather, and its increasing impact on our planet, our ecosystems, our security, and our way of life?

Then combine your academic and personal interests by enrolling at university in atmospheric and/or hydrological science, scientific fields with concrete applications! As the field is only about 100 years old, there remains a lot to understand and discover. Advances in technology (supercomputers, satellites), numerical methods, Big Data and artificial intelligence are helping us to push the limits of our forecasts and models of the *atmosphere-earth-ocean-ice* system.

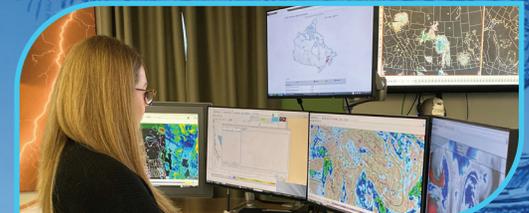
Canada is a northern country with one of the largest territories in the world. As such, weather and hydrological phenomena and their impacts are omnipresent in the lives of Canadians. Downpours leading to floods, droughts leading to forest fires, tornadoes, snowstorms, ice storms and even hurricanes affect our mobility and safety regularly across our domain. Hence the importance of the science to provide short- to medium- to long-term forecasts and warnings to help manage the associated impacts.

Environment and Climate Change Canada's Meteorological Service is this country's authority for weather alerting and forecasts. Its mandate is to enable citizens, communities and vulnerable sectors to **increase their resilience** to extreme weather, air quality and hydrological changes in an increasingly variable climate.

For more information, visit Canada.ca and search for **weather**.

The Meteorological Service of Canada (MSC) currently employs several hundred meteorologists, as well as hydrologists and other scientists, and **conducts a recruitment campaign on a regular basis**.

Traditionally, meteorologists used to work in a 24/7 operational context in regional forecast offices across the country. Increasingly, the profession is transforming and the meteorologist is becoming a scientist in their own right and contributes to the evaluation of numerical weather models and their development. There is also increased focus on communicating risks and uncertainties to users and public authorities. The profession therefore offers multiple facets that will appeal to you, be it on the operational side in a weather centre, on the research and development (R&D) side, in client services, or in a combination of these roles.



OTHER OPPORTUNITIES AND POTENTIAL EMPLOYERS:

The MSC is certainly not the only employer in this field. With a degree, you could also be employed in the energy field, particularly with renewables (hydro, solar, wind), private weather forecasting companies, the insurance industry, transportation, engineering firms, and provincial governments. You might also pursue an academic career in university-level research or in artificial intelligence and machine learning as it relates to climate and weather for instance. As climate continues to garner attention and research expands, other opportunities to contribute within the field will likely arise in the coming years.

Weather and climate know no borders and affect us all. That is why Environment and Climate Change Canada, academia, the World Meteorological Organization (WMO) and other major weather centres around the world are collaborating to advance this science.

To learn more, watch the short YouTube video: **Why the world needs meteorologists**, created by the WMO!



UNIVERSITY PROGRAMS:

Many Canadian universities offer undergraduate and graduate programs in atmospheric science and meteorology:

Dalhousie University (Halifax, NS)

UQAM (Montreal, QC)

McGill (Montreal, QC)

York University (Toronto, ON)

University of Manitoba (Winnipeg, MB)

University of British Columbia (Vancouver, BC)

Other universities also offer courses, so ask around and inform yourself about them when applying.

Regardless of the program you choose to study, the minimum requirements for becoming a meteorologist with the MSC are:

- 30 credits in math and physics
- 1 course in dynamic meteorology
- 1 course in synoptic meteorology
- 1 course in thermodynamic meteorology
- a minimum of three other courses related to meteorology

(Knowledge of computer science, risk communication and bilingualism in French and English are assets)

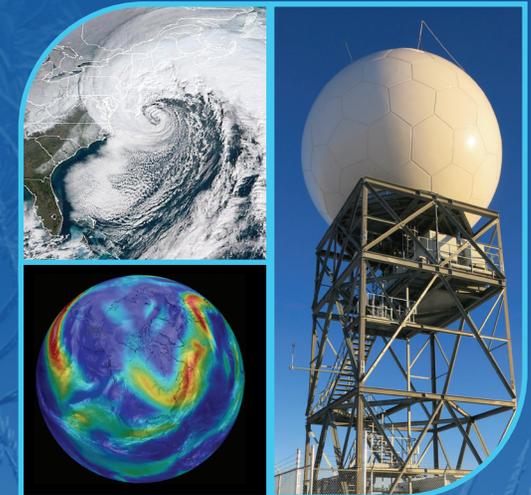
If you are interested in this field, talk to your **career counsellor**, visit the university programs, or visit a weather prediction centre.

The Canadian Meteorological and Oceanographic Society (CMOS) is an excellent resource for information on this field: cmos.in1touch.org



TRAINING WITHIN THE MSC:

Typically, a university graduate hired by the MSC would start their career in a training course for their first 7-8 months, prior to being posted to one of our 7 regional prediction centres **around the country** (Halifax, Gander, Montreal, Toronto, Winnipeg, Edmonton or Vancouver), or at the Canadian Centre for Meteorological and Environmental Prediction in Dorval, QC.



The domains of meteorology, hydrology and earth systems need passionate and curious people to advance the science and provide a high level of service to Canadians. If you want to use your talents to make a difference, this may be the field for you!