WATER AND HUMAN HEALTH (BWRC)

NOTE: ADMISSION TO THIS PROGRAM IS CURRENTLY SUSPENDED. NO COURSES WILL BE OFFERED IN 2023-24 ACADEMIC YEAR.

All courses are 100% online and are 3.0 credit units.

BWRC 801 Chemistry and Biology of Natural Waters
Water within the natural environment both drives and supports a complex web of chemical and biological processes and populations. This course covers several topics in the area of natural water chemistry including: dilute aqueous solution chemistry of surface and groundwater systems; chemical kinetics and equilibrium; acid-base chemistry; coordination chemistry; precipitation, dissolution and complex formation; carbonate, phosphate and chlorine chemistry; oxidation-reduction reactions and corrosion; and solution of multi-equilibria problems. In addition, biological processes and populations will be explored by this course, including microorganism dynamics.

BWRC 802 Watershed Hydrology
This course will introduce the concept of a watershed, covering general aspects such as surface water hydrology, groundwater, ecosystems, anthropogenic and meteorological influences. Large and small scale watersheds will be discussed, along with the interactions of sub-watersheds within larger systems. Extensive background information on the ecology, surface water flows, topography and meteorological information of the field site will be used to illustrate these watershed aspects.

BWRC 803 Water and Human Health
Water and Health is designed to give recent graduates and professionals an enhanced understanding of the role of water in driving health outcomes and ultimately the sustainability of populations and communities. This course will investigate water in its natural state and the roles of contaminants on human health. In addition, the public health aspects of drinking and recreational water will be investigated. Finally, the geospatial implications for differing water qualities and their potential health outcomes will be explored.

BWRC 804 Water Policy and Governance
This course will investigate water governance from the science, engineering and policy aspects found around the world. This course is designed to engage students in discussions on a wide range of governance issues relating to water in a way that is relevant to their current field of study. Specific policies and governance that are relevant world-wide will be covered and include climate change, water quality, water supply, water and the environment, and water and human health. Current regulatory requirements, both provincial and federal, will be discussed as the second module in order to set the stage for future modules. Students will examine the different legislation and agency jurisdictions for each aspect of a watershed. These will include such topics as fisheries and aquatic habitat regulations, environmental protection laws and requirements for environmental assessments. Students will examine the competing interests associated with most watersheds near developed areas in Ontario. These will include such strategies as restoration, water flow management and flood mitigation, flora and fauna protection and enhancement, and selected development zoning, etc.