

**Water Security Course Water Without Borders Program (UNU INWEH- McMaster University)  
WOB 702 A & B**

This free course offered by United Nation’s University Water Learning Courses, although is available to any individual who chooses to learn more on global water security, is focused on an academic audience who is typically pursuing graduate studies in environmental, political, and scientific areas of expertise. In 2019, a special section of the Global Water Security Course is offered to Water Without Borders students as part of WOB 702.

### Coordinators

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### Key Information

The concept of water security is interlinked with many other global social and environmental issues and is intrinsically linked with climate security, as the two are naturally dependent on one another. As a result of this interconnection, water security is also linked to energy security, food security, human development, national security, and sustainable economic development.

This course offers a self-guided program of instruction to advance the capacities of participants to recognize patterns among multiple points of interest pointing the way to holistic water security solutions. This approach demonstrates that water security cannot be achieved through one dimensional solution, and that problems of water security must be viewed through all possible lenses.

For WWB Students in 2019, this online self-study course provides a UNU-INWEH framework for WOB 702 A & B to introduce global water issues through a holistic water security lens. The self-study modules are to be completed independently over two terms, and no later than March 31.

The online course content is supplemented by regular contact and attendance at special events, such as Another Drop Lectures and group discussions during class lectures.

### Course Objectives

The objective of this course is to allow the student to understand that many factors, entities, and economic advancements must fall in line in order for water security to progress throughout under-developed, developing, and developed countries, states, and cities. This includes topics and modules that cover ecosystems, policy making and governance, water-security financing, water-related disasters, sanitation, and much more. The course’s teaching medium follows this objective by offering an organized host of texts, infographics, video modules, quizzes, and graded assignments.

## Information Sheet

### Evaluation:

A list of requirements specifically developed to meet the WWB Program needs will be shared on September 10, 2019 at the first formal meeting and will take place prior to the Welcome Wine and Cheese in the UNU-INWEH Boardroom (“The Amazon room”) on the second floor of McMaster Innovation Park (MIP) on Longwoods south of Main St. West.

Following our meeting everyone should plan to attend the wine and cheese and the first UNU-INWEH Another Drop Lecture of the year. (Please note that attendance at these lectures is mandatory for WWB Program Students).

WWB Program students are required to complete the online modules on their own, but the evaluation components of the online modules are optional for them.

However, all WWB Program students are required to attend Another Drop Lectures, and the UNU Staff seminars, and attend 2 special events (e.g. field trips, workshops, conferences, McMaster Water week events, etc.) to secure credit. Attendance will be taken at live events, and online participation will be tracked.

Course Assessment Breakdown - Please note: Evaluation for WOB 702 will be based on:

- ✓ Visa application exercise 10%
- ✓ Team poster for McMaster Water Week 40%
- ✓ Journal of personal observation, reflection and participation (e.g. accounts of online course, lectures, events, other activities, and water related current events) 50%
- ✓ Completion of Global Water Security online course modules Pass/Fail

**Background- Water Security Course Water Without Borders Program**

Water is essential to all life on earth but is also a finite resource. Out of 7.7 billion people worldwide, 783 million people do not have access to clean water, 2.4 billion people lack proper sanitation, 1,000 children die every day due to preventable water and sanitation-related diarrheal diseases, and 1.8 billion people use water contaminated with feces. These statistics only begin to scratch the surface of the multitude of water-related issues that trouble communities, countries and continents. Therefore, focusing on multiple facets of water security such as the quality of drinking water, good governance, ecosystem conservation, and economic development is extremely important in understanding how to reduce the impact of water-based problems, local and global.

Water will be a key resource and an important point of political consideration for decision-makers in developing countries over the next 50 years. For many, effective water management will make the difference between peace and conflict, economic prosperity and poverty, and environmental well-being and degradation. Viewing national policy planning from a water security perspective can offer decision makers new insight for developing policies, natural resource agendas, and investments. This approach stresses the importance of placing natural resources at the center of political and economic processes in resource-poor countries. It also suggests that water security agendas could help decision makers comprehend the multi-dimensional aspects of sustainable water resource management. Such an agenda gives decision makers a hands-on planning tool to develop effective policies, to design programs, and to plan investments that address all societal and socio-economic aspects of water for sustainable development.

**Course Context based on the Water Security Conceptual Framework**

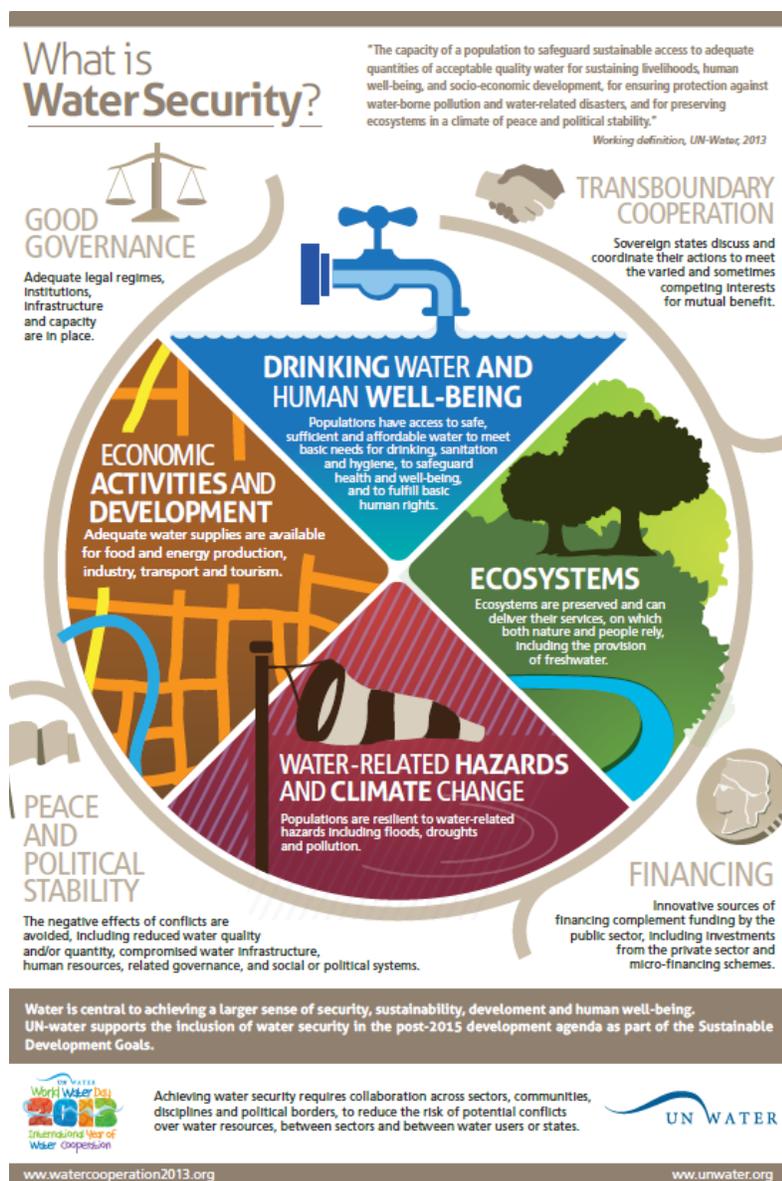
The water security conceptual framework as outlined by UN-Water offers a broad view of the components that are required to be maintained in order to achieve progression in water efficacy and equality. These include:

- Drinking Water and Human Well-Being
- Transboundary Cooperation
- Ecosystems
- Financing
- Water-related Hazards and Climate Change
- Peace and Political Stability
- Economic Activities and Development
- Good Governance

Accompanying the modules designed around above listed topics, there is an introductory module that explains the importance of water and its effects around the globe. There is also a concluding module that summarizes multiple Global Risk Reports and explains the role of water security on media, gender roles, and equality.

The concepts listed above are easier to grasp in the context of the working definition of water security by UN-Water, which is, “the capacity of a population to safeguard sustainable access to adequate quantities of acceptable quality water for sustaining livelihoods, human well-being, and socio-economic development, for ensuring protection against water-borne pollution and water-related disasters, and for preserving ecosystems in a climate of peace and political stability.”

This working definition indicates that water is central to achieving a larger sense of security, sustainability, development and human well-being. The UN-Water Security framework states that achieving water security requires collaboration across sectors, communities, disciplines, and political borders in order to reduce the risk of conflicts between sectors over water resources.



## Course Module Overviews (Modules 1 through 10)

### **Module 1: Introduction to Water Security**

**Objectives:** This module introduces the main concepts of water security and their interlinkage with energy, food, and human security, along with climate change and economic development. It defines water security and its multitude of components. It also teaches how the water cycle lines with the integrated water resource management conceptual framework.

**Outline:**

- Introduction to water security
- Conceptual framework for managing water resources
- Assignment (2 parts) (15%)

### **Module 2: Water and Human Well-Being**

**Objectives:** Ensuring that all populations have access to safe water will help ensure the health, dignity, and prosperity of all. This module will ensure that students have a basic understanding in: the concept of Water, Sanitation, and Hygiene (WASH); the global state of WASH; impacts of water on the health of communities; Considerations for ensuring water quality; financing specifically related to water and health; and how water can be used as a tool for empowerment for women and girls, an especially marginalized population within Low-and Middle-Income Countries.

**Outline:**

- Introduction to WASH
- Global state of WASH
- Water quality
- Impact of WASH
- Financing for WASH
- Empowerment through WASH
- Quiz and research activity
- Writing assignment (15%)

### **Module 3: Ecosystems**

**Objectives:** Water security clearly impacts socio-economic stability as it relates to the health and sustainability of water. It also relates to ecosystems as more than three-quarters of accessible water that is typically used for agriculture, urban, industrial and environmental uses are derived from forests and vegetated landscapes. Water supply to production systems, communities, and ecosystems, as well as the permanence of atmospheric, local climate, and aquifer recharge, are all *additional attributes* to natural water rationing.

**Outline:**

- World water report and Natural based solutions: An overview
- Global frameworks and natural solutions for water security
- Multifunctional wetlands
- Urban water security systems and ecosystems
- Assignment (3 parts) (15%)

**Module 4: Water Hazards and Resilience**

**Objectives:** Water-related disasters pose a significant threat to economies, infrastructure, and lives in both the developed and developing world. Among them, *floods, droughts, tsunamis, and various kinds of cyclones* are dominant. Students will be tasked in understanding the complexities of water-related disasters and resiliency and how it is essential for building and maintaining water resilient plans and policies aimed at increasing water security for a sustainable society.

**Outline:**

- Resiliency and Threats
- Climate change
- Building and maintaining resiliency

**Module 5: Transboundary Cooperation**

**Objectives:** How can water professionals and decision makers govern water effectively in this complex situation? This module will review the current state of the world's transboundary water, explore essential concepts in discussing transboundary water issues, and analyze the legal, economic and political factors affecting its management.

**Outline:**

- Introduction to Transboundary Water
- Transboundary Water Management
- Analysis of key factors affecting transboundary water

**Module 6: Peace and Political Stability**

**Objectives:** This module will explore the specific communities impacted by water insecurity, and the socio-political factors that can spur or interrupt peace processes. The difference between **positive and negative peace** will be defined, along with some approaches to transform water-related conflicts. Through case studies in the module will put key concepts into practice, while exploring water's role in peace processes.

**Outline:**

- Introduction to peace and political stability

- Sociopolitical nexus
- Political stability, water stability, and peace building

### **Module 7: Good Governance**

**Objectives:** The fifth assessment report of the *Intergovernmental Panel on Climate Change* (IPCC) stated that risks to water sources increase significantly as greenhouse concentrations intensify. Among other effects, climate change is expected to negatively impact water quality and the amount of renewable surface and groundwater available in dry, sub-tropical areas.

**Outline:**

- Governance, management, and water security
- Water management map
- What to do, and how?
- Political, legal, and regulatory frameworks

### **Module 8: Economics of Water**

**Objectives:** This module's goal is to allow you to gain a deeper understanding on the economics of water and how they affect agricultural production, tourism, and the water security nexus. As we know, water is an indispensable component of all economic activity. Agriculture, energy production, industry, and mining that ensures long-term water security has received increased attention over the past decades in both policy and academics communities.

**Outline:**

- Introduction to economics of water
- Understanding economic activities and water security nexus
- Economic activities and WFE-Nexus

### **Module 9: Financing Water Security**

**Objectives:** The United Nations General Assembly explicitly recognizes the human right to water and sanitation and acknowledges that clean drinking water and sanitation are essential to the realization of all human rights to provide financial resources, help capacity-building, and trade technology to help countries, in particular developing countries, to provide safe, clean, accessible and affordable drinking water and sanitation for all. This said, inadequate investment and poor governance result in a lack of access to water services by a huge population.

**Outline:**

- Water security financing mechanisms and models
- Water pricing and price charges

- Partnerships in the water financing sector
- Water financing gaps and needs
- Assignment (2 parts) (15%)

### **Module 10: Concluding Notes on Water Security**

**Objectives:** When considering the different aspects of water security, the subject is multi-faceted and complex – involving multiple sectors and stakeholders, ranging from health and well-being to governance and the economy. The **water security framework components** cannot be considered in isolation. This module covers a multitude of topics such as the water security agenda, summaries on World Water Development Reports and Global Risk Reports, water security in the media, and gender and water security. There is also a course wrap up and an introduction to the final assignment.

#### **Outline:**

- Summarizing the water security agenda
- Water security policies
- Gender and water security
- Water security in the media
- WWDR Reports
- GRR Reports
- Final Assignment (40%)

Course Module Overviews (Modules 1 through 10)

### **Special Notes: September 10, 2019**

For WWB Students in 2019, we will adopt this online course as a framework, to be supplemented with Another Drop Lectures, and a list of requirements specifically developed to meet the WWB Program needs will be shared on September 10, 2019.

This is our first formal meeting and will take place prior to the Welcome Wine and Cheese in the UNU-INWEH Boardroom (“The Amazon room”) on the second floor of McMaster Innovation Park (MIP) on Longwoods south of Main St. West.

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