



UNITED NATIONS
UNIVERSITY



Unique UN Virtual 'Academy' Aims to Improve Water Management Worldwide

Unprecedented Academic
Diploma from UN University
Offered to Graduates;
Course Assembled from Over 60
International Government,
Academic Sources

The WVLC can be previewed online at <http://wvlc.uwaterloo.ca>

In an effort to help raise the availability of safe water worldwide, the United Nations has created a unique new virtual 'academy' to teach the fundamentals of water management on a global level.

Created with materials from over 60 international sources, the 10-subject, 250-hour program course offers graduates an unprecedented academic diploma from the United Nations, the first ever authorized by the Tokyo-based United Nations University.

A Canadian-based programme of UN University (the International Network on Water, Environment and Health – INWEH) developed the course in partnership with the University of Waterloo, over three years with US \$1.6 million from the UN Development Account. The program will be offered through affiliated institutions in Africa, Asia and the South Pacific, eventually expanding worldwide.

"Educational programming like that offered through the UN Water Virtual Learning Center is unique not just within UN University, but the UN system as a whole. I can think of no international issue more fundamentally important than water management to serve as the subject for the first-ever UN University Diploma Program."

Prof. Hans van Ginkel, UN Under Secretary-General and Rector of UNU

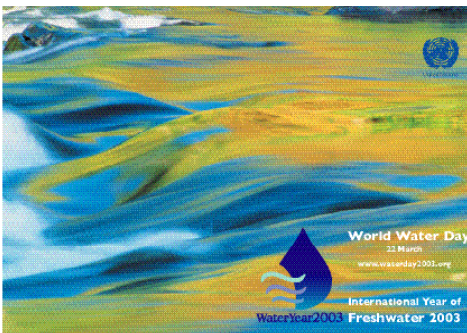
The curriculum is designed as an undergraduate course for adult professionals, usually with undergraduate degrees but with little or no training in Integrated Water Resources Management (IWRM). It will be of greatest immediate benefit to engineers, district managers, government administrators and others – responsible for water management at the national and regional level who wish to upgrade their knowledge of modern water management concepts and principles. Other individuals may take the course as part of a self-directed learning experience.

It will also be customized to meet regional training needs and interests such as desalination, diminishing glaciers, and the water management problems of small island states. Planning is underway for delivery to additional centers in South America, Asia and the Middle East.

"Spin-off" courses will be created both for non-water professionals (political decision makers and others who need to understand the basics of water management) and for advanced water specialists.



2003 International Year of Freshwater



Announced Dec. 1 at the UN University annual Governing Council meeting in Tokyo as a way to mark the end of the 2003 International Year of Freshwater, the WWLC is a showcase UNU initiative for the World Summit on the Information Society, Geneva, Dec. 10-12.

UNU-INWEH, the Canadian-based water “academy” of the United Nations University, hosted at McMaster University in Hamilton, served as principal architect of the course, drawing on information throughout the UN system and other leading global institutions. The work was guided by an international advisory committee comprised of experts from UNESCO, France; the Wood’s Hole Institute, USA; Kyoto University, Japan; the University of Waterloo, Canada; and eminent professors in Uganda and Brazil.

The WWLC complements UNU’s Global Virtual University, an online environmental educational initiative based in Norway, and represents a concrete follow-up to the 2002 World Summit on Sustainable Development in Johannesburg, which placed water management squarely at the top of international development priorities.

Collaboration on curriculum development has involved over 60 academics and professionals from organizations worldwide, including:

- ◆ Canadian Universities: McMaster, Acadia, Waterloo, UBC, Guelph, Windsor and Okanagan University College
- ◆ Canadian Government Agencies: Environment Canada and its National Water Research Institute; Fisheries and Oceans, Canada’s Great Lakes Laboratory for Fisheries and Aquatic Sciences; the Ontario Ministry of the Environment
- ◆ US and Overseas Universities and Research Institutes: Wayne State, Wisconsin, Kyoto, Wageningen Agricultural University, Wood’s Hole Marine Biological Laboratory and the International Institute of Ecology, Brazil
- ◆ US Federal Government: Environmental Protection Agency, Fish and Wildlife Service, Geological Survey, Fisheries Service and US Sea Grant
- ◆ Private and Not-for-Profit Organizations: Cumming Cockburn, The Ontario Centre for Environmental Technology Advancement, Canadian Association of Environmental Laboratories and the Grand River Conservation Authority
- ◆ UN and International Organizations: United Nations University, UNESCO, World Health Organization, World Meteorological Organization, UN Environment Programme, South Pacific Applied Geoscience Commission and the Canada/US International Joint Commission.

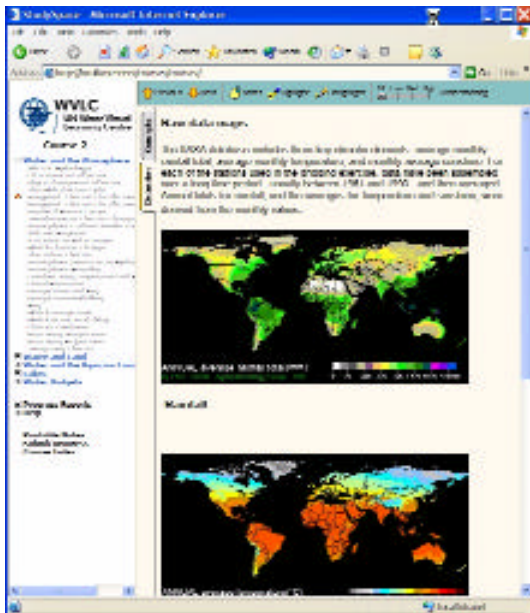
“Many practicing professionals simply can’t take time off to pursue a two-year course or even a two-week course.

Distance education has become very successful because it allows people to participate as part of their on-the-job training. Designing an education program for global delivery has been a difficult challenge but the payoff will be improved water management and, potentially, improved health for many people suffering from water shortages and poor water quality in developing countries.”

Manuel Dengo, Chief, Water Resources Management Branch, UN Department of Economic and Social Affairs



How the course will work



Students will access the course material via CD-ROM, the Internet or mailed print-outs, depending on their circumstances and access to technology. Plans are also in place to offer the material in languages other than English.

The core content of the 10-course curriculum will remain the same wherever the course is delivered. Each course includes 25 teaching hours per course with tutorial and case study material along with independent work assignments and examinations. Participants will progressively build their own demonstration example of an integrated water resource management plan from materials covered in each course and based on data and information from their local region or watershed.

The curriculum includes:

COURSE 1: Introduction

A basic introduction to the fundamental concepts of integrated water resources management, techniques and knowledge required to understand and manage water resources.

COURSE 2: Water transfer

Provides a basic understanding of the hydrologic cycle; processes and measurements; the factors affecting movement and behaviour in different environments; surface and groundwater environments; the watershed concept and; the impacts of weather and climate.

COURSE 3: The terrestrial ecosystem and the impacts of land use changes

Fundamental ecological concepts; the role of the natural environment in the hydrologic cycle; the effects of changes in land use on water processes; the impacts of water on land; tools of watershed analysis; aspects of land use planning, control and conservation.

COURSE 4: The aquatic ecosystem

The basics of the physical, chemical, biological and ecological aspects of streams, rivers, lakes, wetlands, estuaries and groundwater systems.

COURSE 5: Aquatic ecosystem health and impact assessment

The impacts of human activities on the aquatic environment and the methods of measuring those impacts.

COURSE 6: Water use

Human water uses and their impacts; water consumption and aspects of public water supply.

“In 2000, world leaders established the Millennium Development Goal of halving by 2015 the number of people without safe water or sanitation facilities. It is clear that to meet such an ambitious goal the world needs to train an enormous number of water managers, scientists, engineers and technologists. Through this initiative, we hope to greatly expand global educational opportunities and the availability of authoritative materials, customized to recognize local needs and conditions.”

Dr. Ralph Daley, Director of UNU-INWEH

“It is estimated that half of all illnesses in developing countries at any given time are water related. We have an obligation to do whatever we can to make water accessible and safe for people in less fortunate countries.”

Prof. Colin Mayfield, University of Waterloo, Assistant Director, UNU-INWEH



UN University www.unu.edu

Established by the U.N. General Assembly in 1973, UNU is an international community of scholars engaged in research, advanced training and the dissemination of knowledge related to pressing global problems. Activities focus mainly on peace and conflict resolution, sustainable development and the use of science and technology to advance human welfare. The University operates a worldwide network of research and post-graduate training centres, with headquarters in Tokyo.

UNU-INWEH www.inweh.unu.edu

With core funding from Canada, UNU-INWEH is an innovative and effective international freshwater capacity-development service, helping developing countries address water-management needs – scientific, educational, institutional and managerial. The Canadian headquarters unit provides leadership and logistics support; a regional office in Jordan facilitates local program development; and an extensive “college of associates” – collaborating experts from different disciplines and countries – implement UNU-INWEH activities, supported by a network of “cooperating institutions” worldwide.

COURSE 7: Wastewater

The problems resulting from point and non-point discharges; waste treatment processes; best management practices, monitoring and assessment approaches and; urban versus rural environments.

COURSE 8: Governance and community based approaches

The concepts and practices of community based water resources management; domestic and international governance, community involvement and gender issues

COURSE 9: Organizational infrastructure and management

The issues, concerns and approaches to finance, budget, infrastructure, management and planning, as well as public health administration and project management.

COURSE 10: Applying Integrated Water Resources Management:

Customized case studies, practical illustrations of the concepts and procedures of IWRM, and investigative techniques for students to assess their own IWRM needs, conducted in tutorial format.

The WVLC collaborating centers worldwide will create regional case studies and other regional content, mark individual course tests and proctor a final examination.

Leading water scholars and practitioners vetted the course material, which were tested on 28 graduate students from around the world studying in Canada, with an emphasis on students from South Asia and Africa. Feedback was constructive and very positive.

Some specialized courses will involve institutions elsewhere in the UN and UNU systems – for example courses on water leadership and governance, drinking water contamination, hydrology, and decision support technologies.

For more information, please see
<http://wvlc.uwaterloo.ca>
www.inweh.unu.edu