



U.S. Army Corps of Engineers Institute for Water Resources

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<http://www.iwr.usace.army.mil>

For More Information:
+1 (703) 428-9090

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HEC Hydraulic Engineers Lead Training in Guatemala

ALEXANDRIA, VIRGINIA. Hydraulic engineers Vince Moody and Lea Adams from the Institute for Water Resources Hydrologic Engineering Center (HEC) traveled to Guatemala City, Guatemala to teach a class on hydraulics and hydrology from April 7 through April 12, 2014 to 42 students. The class was requested by Professor Joram Gil, the United Nations Educational, Scientific and Cultural Organization (UNESCO) Chair on Sustainable Management of Water Resources at the University of San Carlos, Guatemala.

The request was made in response to ongoing issues with bridges in the region being washed out, with resulting loss of life and property. The training was sponsored by the International Center for Integrated Water Resources Management (ICIWaRM), under the auspices of UNESCO, in conjunction with the Latin America/Caribbean office of UNESCO's International Hydrological Programme, the University of San Carlos, and the Guatemalan Colegio de Ingenieros. The course directly supports ICIWaRM's mission of addressing regional and global water-related challenges through training and capacity development.

The course featured training sessions on hydraulic and hydrologic concepts and principles as well as the use of the software programs HEC-HMS (Hydrologic Modeling System) and HEC-RAS (River Analysis System) developed by HEC.

Hydrologic modeling topics covered in the class included methods for modeling basin average precipitation, development of hypothetical precipitation (for design storms), hydrologic channel routing and use of the HEC-HMS software.

Hydraulic modeling topics included calculation of water surface profiles, bridge and culvert hydraulics, data requirement hydraulic modeling and use of the HEC-RAS software.

Hands-on workshops using both HEC-HMS and HEC-RAS gave the students the opportunity to apply lecture material—almost all of which had been translated into Spanish—and learn use of the software, including functionality such as: data entry, simulation of flood events, model calibration and results analysis.

Students from several other Central American countries (Costa Rica, El Salvador, Guatemala and Nicaragua) participated in the training and expressed interest in additional training for unsteady flow simulation, sediment transportation and advanced bridge hydraulics.

More about the Hydrologic Engineering Center

The Hydrologic Engineering Center is an organization within the Institute for Water Resources (IWR) and is the designated Center of Expertise for the U.S. Army Corps of Engineers (USACE) in the technical areas of surface and groundwater hydrology, river hydraulics and sediment transport, hydrologic statistics and risk analysis, reservoir system analysis, planning analysis, real-time water control management and a number of other closely associated

technical subjects. HEC supports USACE's field offices, headquarters and laboratories by providing technical methods and guidance, water resources models and associated utilities, training and workshops; accomplishing research and development; and performing technical assistance and special projects. The products that are developed from these activities are for USACE but are available to the public and may be freely downloaded from the HEC web site.

More about ICIWaRM

The International Center for Integrated Water Resources Management (ICIWaRM), under the auspices of UNESCO, is a UNESCO Category 2 water centre headquartered at IWR in Alexandria, Virginia, USA. The mission of ICIWaRM is the advancement of the science and practice of integrated water resources management to address water security and other water-related challenges by regional and global action, through new knowledge, innovative technologies, collaborative interdisciplinary scientific research, networking, training and capacity development. ICIWaRM is a consortium of U.S. Government agencies, university departments and non-governmental organizations committed to working together in support of the strategic program objectives of UNESCO's International Hydrological Programme (IHP). ICIWaRM works closely with the U.S. National Commission for UNESCO, the U.S. National Committee for the IHP, and category 2 centres in other nations.

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