Additional Distance Learning Programs on Environmental and Water Resources Topics

Hands-On HEC-1

This seminar-on-CD is a comprehensive introduction to watershed modeling using HEC-1 and also includes introductions to HEC-HMS, HERC-Geo HMS and LIDAR Data. HEC-1 computes hydrographs for both simple and complex stream systems. It can be used for designing storm water detention basins, analyzing large reservoirs, performing dam-breach analyses, and computing urban runoff using kinematic wave methods. It provides several methods for computing precipitation distributions, infiltration losses, unit hydrographs, channel routing, and other basic hydrologic computations.

0.4 CEUs

Introduction to HEC-HMS

This seminar-on-CD is an overview and demonstration of the Hydraulic Engineering Center's Hydrologic Modeling System (HEC-HMS) software. It is intended primarily for those already familiar with hydrologic watershed models such as HEC-1, TR-20, or SWMM. The focus is on new HEC-HMS capabilities, such as the powerful graphical interface and the ability to use new data sets such as NEXRAD weather radar data and Digital Elevation Models (DEMs). While this seminar is a comprehensive overview and demonstration of the HECHMS software, it does not cover all of the fundamentals of watershed hydrologic analysis.

0.4 CEUs

Introduction to HEC-RAS

This seminar-on-CD provides an overview and demonstration of the Hydraulic Engineering Center's River Analysis System (HEC-RAS) software with a focus on HECRAS capabilities. It discusses the history and purpose of HEC-RAS. Current capabilities are covered in detail and future enhancements are highlighted. Comparisons are made between HEC-2 and HEC-RAS. Getting started with a HEC-RAS model will be presented along with many example modeling situations that are included with the program.

0.4 CEUs

Storm Water Management

This online course provides an understanding of storm water management. You will learn program organizational issues, urban storm water management, NPDES Phase II, and financing issues (including the use of storm water utilities), and how to construct comprehensive storm water management program.

7.5 PDHs

Wetlands and 404 Permitting

This online course provides an overview of wetlands, including a definition of what wetlands are, the regulation of wetlands, the 404 permitting process, wetlands mitigation and future directions.

6.0 PDHs

"The course was informative on the many possibilities of using GIS. This was helpful in acquainting me on how to move into utilizing GIS and GPS."

–George Crawford, President, Engineering & Design Group, Inc., Oviedo, FL

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GIS Applications in Water, Wastewater and Stormwater Systems Online Course

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ASCE Distance Learning:

Hands-On HEC-1 (W47)
☐ $195 M / $245 NM

Introduction to HEC-HMS (V84)
☐ $195 M / $245 NM

Introduction to HEC-RAS (V83)
☐ $195 M / $245 NM

Storm Water Management (W16)
☐ $299 M / $379 NM

Wetlands and 404 Permitting (W15)
☐ $295 M / $345 NM

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GIS Applications in Water, Wastewater and Stormwater Systems Online Course

A NEW On-Demand, Online Course from ASCE

Benefits of ASCE's On-Demand, Online Courses

- Learn anytime, anywhere
- Work at your own pace
- Videostreamed seminars are just like being there... listen to and watch the instructor and view their PowerPoint slides as the course progresses
- Attend different segments of the course at times convenient for you
- Easily navigate from one section of the course to another
- Benefit from ASCE's quality continuing education programs even if you cannot take time off from work to attend a live, instructor-led course

This is an ASCE Continuing Education Course, NOT JUNK MAIL. If you don't need CEU's pass this on to someone who does.

IACET

1.1 CEUs

GIS Applications in Water, Wastewater and Stormwater Systems Online Course

P.E. Exam Review Course

A Geographic Information System (GIS) is an information system for managing the data referenced by geographic coordinates. GIS consists of hardware, software, data, and personnel to effectively capture, store, update, manipulate, analyze, and display geographically referenced information.

More than 80 percent of all the information used by water, wastewater, and stormwater utilities is geographically referenced. While GIS applications for water, wastewater, and stormwater systems are not new, getting beyond the basic inventory and mapping functions is often challenging. Unless a utility GIS is taken to the operational level, it's just a pretty map. That is why GIS emphasis is now shifting from computerized mapping to enterprise-wide mission critical applications. GIS applications improve the quality of life and make things easier to do, which improves productivity and reduces cost. GIS applications have the potential to prepare our water, wastewater, and stormwater systems for the operational challenges of the twenty-first century. The time has come for all the professionals involved in the planning, design, construction, inspection, maintenance, and operation of water, wastewater, and stormwater systems to benefit from one of the most promising and exciting technologies of the decade in their profession – the use of GIS.

This course will focus on the four Ms that are of particular importance to water, wastewater, and stormwater system managers: Mapping, Monitoring, Modeling, and Maintenance. It will not train you in use of a particular GIS software. However, with the help of new methods, case studies, and software demonstrations, the course will show you how to use GIS to develop these "4M" applications. You will be convinced that with GIS the possibilities to map, monitor, model, and maintain your water, wastewater, and stormwater systems are almost endless.

Course Benefits/Learning Outcomes

- Learn the new acronym: GIS = Get Intelligent Solutions
- Gain knowledge of how to use GIS in planning, design, mapping, modeling, monitoring, inspection, maintenance, and operation of your water, wastewater, and stormwater system
- Learn about GIS software and its suitability to your GIS applications
- Learn how to integrate your water, wastewater, and stormwater system hydrologic and hydraulic (H&H) models with GIS
- Discover GIS applications in inspection and maintenance
- Learn how to conduct work order management in GIS
- Learn about the availability of free GIS data on the Internet
- Learn how to use GPS to collect GIS data

What Others Had To Say:

"An excellent guide to the state-of-the-art technology in GIS and an ideal seminar for managers who make decisions for water, wastewater, and stormwater systems and utilities."

– Fredrick Rose, Branch Chief, Stormwater Planning Division, Fairfax County, Virginia

Benefits of ASCE's On-Demand, Online Courses

- Learn anytime, anywhere
- Work at your own pace
- Videostreamed seminars are just like being there... listen to and watch the instructor and view their PowerPoint slides as the course progresses
- Attend different segments of the course at times convenient for you
- Easily navigate from one section of the course to another
- Benefit from ASCE's quality continuing education programs even if you cannot take time off from work to attend a live, instructor-led course

Course Instructor

Uzair Shamsi, Ph.D., P.E., DEE, GISP, F.ASCE, is the Director of GIS and Information Management Technologies with ATS-Chester Engineers, Pittsburgh, Pennsylvania. He also teaches GIS and Water Resources Engineering courses at the University of Pittsburgh and Penn State University. Dr. Shamsi is an ASCE continuing education instructor and an ESRI authorized ArcView® GIS instructor since 1998. He has taught GIS courses to more than 500 professionals throughout the country. Dr. Shamsi earned his Ph.D. in Civil Engineering from the University of Pittsburgh in 1988. He has 20 years of experience in teaching, research, and engineering consulting. His accomplishments include over 30 lectures and 80 publications in the areas of H&H modeling and GIS applications. Dr. Shamsi is the author of two GIS books one of which titled "GIS Tools for Water, Wastewater, and Stormwater Systems" is an ASCE Press Best-Seller. Dr. Shamsi is a licensed Professional Engineer in Pennsylvania, Ohio, and West Virginia and a member of WEF, and AWWA and a certified GIS Professional (GISP) from the GIS Certification Institute.

Who Should Attend

This course is ideally suited for civil and environmental engineering project engineers and project managers involved in the management of water, sewer, and stormwater systems. Other professionals, such as consultants, system analysts, GIS technicians, planners, university researchers and professors, city managers, water and sewer utility personnel, and government employees involved in GIS and water related work will also benefit from this course.

Computer Requirements

PC Users:
- Pentium or higher CPU
- 32 MB RAM
- Sound card and speakers
- Windows 95+
- Internet connection: 28.8 kbps+
- Netscape 4.0-4.72
- Internet Explorer 4.0
- Realplayer 7

Mac Users:
- PowerPC 200mhz+
- 32 MB RAM+
- Sound card
- Speakers
- OS 8.0 or higher
- Internet connection: 28.8 kbps+
- Netscape 4.0-4.5
- RealPlayer G2 Final Version

"This was the perfect seminar for me as a manager looking for a good overview of GIS applications in water & wastewater."

–Paul Bruno, City of Henderson, Henderson, NV

"This was a great seminar with good information. The literature offers good resource information for GIS data & programs."

–Gary A. Lee, P.E., L.S., J-U-B Engineers, Inc., Boise, ID

Course Outline

Introduction
Schedule
Learning objectives
GIS basics

GIS Software
Mapping software
Application software
Software vendors and cost

GIS Data
Assets vs. applications data
Water system data
Wastewater system data
Stormwater system data
Public domain data on the Internet
Commercial data

Needs Assessment
Application needs
System design
Database design
Base map
Hardware and software

Utility Mapping Applications
Mapping steps
Pilot project
Water main break isolation
Flood plain mapping
3-D visualization
Pilot project case study
ArcView/ArcGIS® demos

Monitoring Applications
Radar rainfall
Flow monitoring
TV inspections
Remote sensing/satellite imagery

GIS and Modeling Integration
Interchange method
Interface method
Integration method
GIS and modeling integration demos

Water Distribution System Modeling
Network skeletonization
Estimating node demands
EPANET integration demo

Maintenance Applications
AM/FM compared to CAD and GIS
AM/FM/GIS Software
Asset management
Work order management
Maintenance management
AM/FM/GIS software demos

GIS in Hydrology
Digital Elevation Models (DEMs)
Delineating streams and watersheds
Estimating modeling parameters

GIS for Water Security
Security planning
Vulnerability assessment

GIS/GPS Integration
GPS data
GPS equipment
Field data collection
Using GPS to collect GIS attributes

"Excellent seminar for those new to GIS. Introduces you to many software options available to you as well as some useful GIS applications. The instructor was knowledgeable, very approachable and interested in your comments/questions."

– Kathleen Chmaj, GIS Specialist, Stearn & Wheler, LLC, Amherst, NY