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Dr. Ashraf M. Elmoustaf, works at the Irrigation and Hydraulics Department, Faculty of Engineering, Ain Shams University. His work focuses on the Hydrology, hydro-informatics, River Engineering, and GIS application in water engineering.

He teaches a few water related topics (i.e. Engineering Hydrology, Dam Engineering, Irrigation and Drainage Engineering, and others) for both graduate and post graduate classes.

His research varies between water related branches; he had publish several manuscripts in related peer reviewed journals through his work and post graduate studies under his supervision. He is also a reviewer for specialized journals in the field.



Among these researches, water resources management, flood control and inundation studies the stormwater management in arid environment, hydrologic and hydraulic studies/analysis. Also Conducted advanced studies and modeling for hydraulic simulation, water quality and sedimentation studies for several entities such as bridges and lagoons using the most up-to-date tools and techniques in such filed.

He launched a YouTube channel of educational material for engineering hydrology in Arabic language to help the student and young professionals in Egypt and the ME working in this field. Dr. Ashraf has participated and is now involved in multinational projects with academic infinities in Germany, Turkey, USA, Jordan, Netherlands and many African countries.

MULTI NATIONAL PROJECTS

□ Strengthening Mobility and Promoting Regional Integration of Engineering Education in Africa “**SPREE**” is one of the Intra-ACP Mobility Scheme. The main objective of this project is therefore to strengthen regional integration and networking among engineering education in Africa through sharing experiences in the areas of academics, research and technology transfer and innovation activities, as well as well as using shared educational inputs. This consortium is comprised of 13 African Universities. This project is expected to support the efforts of the continent in alleviating the chronic shortage of skilled engineers both at the academic institutions and the engineering labour market and will create sustained networking among the partners to develop further collaborative research projects in the engineering field. (2019 – Present)

□ PRIMA 2018 “**SWATCH**”. The overarching goal of this research project is to develop and apply innovative methodologies to increase the social-ecological water use efficiency of managed ecosystems along the Mediterranean biome and climate types. We will focus on a diverse set of seasonally dry ecosystems, spanning a large gradient of mean annual rainfall (from 35 to 935 mm/y) across the Mediterranean biome. Case studies will examine the Mediterranean Sea basin from west to east and north to south providing the exceptional opportunity to develop, identify and compare water resources management and planning strategies for contrasting climate conditions in the Mediterranean region. (2019 – Present)

□ Water Joint Programming Initiative (JPI) 2018, “Strategies for Increasing the Water Use Efficiency of Semi-Arid Mediterranean Agrosilvopastoral Systems Under Climate Change” **FLUXMED**. The overarching goal is to develop and apply innovative methodologies to increase the social-ecological WUE of managed ecosystems along the Mediterranean biome and climate types. Case studies will examine the Mediterranean Sea basin from west to east providing the exceptional opportunity to develop and compare water resources management and planning strategies, and develop a wide monitoring network for contrasting climate conditions (mean annual rain from 35 to 780 mm/y) in the Mediterranean region. (2018 – Present)

□ JST - JICA Collaborative Research project "Flash Floods Integrated Management Considering Climate Change for Secured Development in Wadi Basins " The aim of this project is to develop the sustainable system for flash floods integrated management

including prediction, mitigation and water harvesting. The project includes five multidisciplinary groups focusing on Wadi Flash Floods (WFF) and its related - topics. (2017 – 2018)

□ "Curriculum Development of an Interdisciplinary Master on Resource Efficient Cities" **IMaREC**. The new academic Master program IMaREC aims at organizing interdisciplinary teams around research areas that apply science and technology to timely challenges of human needs, social advancement and economic development within the context of the CNRD partners' countries, and with a pilot implementation in Egypt. (2015 – 2017).

□ "Mobility to Enhance Training of Engineering Graduates in Africa", **METEGA** is one of the Intra-ACP Mobility Scheme supported projects with 12 partner universities in Eastern, Central, Southern and Western Africa. Applications are invited for METEGA mobility scholarships. METEGA is designed to provide resources and opportunities for students mobility from four regions of Africa, offering support for Master and Doctoral studies as well as staff exchange among the consortium partners. (2013 – 2019)

□ Excellence Center for Development Cooperation Sustainable Water Management in Developing Countries (EXCEED). (2009- 2019)

□ Joint research project U.S.-Egypt Science & Technology Joint Fund Program "Flood Risk Map for Sinai Governorates" at Iowa Flood Center at IIHR-Hydro science and Engineering (2012).

□ Tempus projects "Technology Management and Integrated Modeling in Natural Resources" Developing of curricula and courses for Hydro-informatics Masters at the Irrigation and Hydraulic department, Faculty of Engineering Ain Shams University. During this project the project team is planning to add a hydro-informatics Joint Degree in our faculty post grad list. I am participating in preparing the courses for this degree and will participate in teaching few course of my field of experience. (2009-2011)

□ Tempus projects "Water Resources Management and Environmental Engineering Program – WATEN" for Developing of curricula and courses for a new postgraduate program at the Irrigation and Hydraulic department, Faculty of Engineering Ain Shams University. During which I participated in preparing and upload on the Aachen

University server two courses in the field of Hydrology. These courses will also be uploaded on our faculty server for the under and post grad students. (2007-2009)

□ Tempus projects "New curriculum for training courses in GIS - NCGIS" for establishing GIS unit at the Irrigation and Hydraulic department, Faculty of Engineering Ain Shams University. During which I participated in the training of undergrad students and some of my colleagues to use the geographic information system as a new technique in engineering application. (2004-2006)

PUBLICATIONS

- “Impact of High Dam on Nile Flood Wave Routing”, ASCE-EGS, III International Symposium on Environmental Hydrology 2002.
- “A 2D Model of Aswan High Dam Reservoir For The Purpose of Flood Management”, ASCE-EGS, IV International Symposium on Environmental Hydrology 2005.
- "2D Hydrodynamic Model of Aswan High Dam Reservoir"; International Conference on Environmental Hydrology, USA, July 2006.
- "2D Hydrodynamic Model for Reservoirs: Case Study High Aswan Dam Reservoir", ASCE-EGS, V International Symposium on Environmental Hydrology 2007.
- "Hydrological Model for the High Aswan Dam Reservoir Management", ASCE-EGS, V International Symposium on Environmental Hydrology 2007.
- "Floods risk assessment using multi criteria analysis", ASCE-EGS, IV International Conference on Environmental Hydrology and Port Engineering, 2009
- "Hydraulic Performance of Inland Ponds Circulation Systems", ASCE-EGS, IV International Conference on Environmental Hydrology and Port Engineering, 2009.
- "Evaluating of Muskingum Hydrological Model Parameters Using 1-D Model", Journal of Engineering and Applied Science – Cairo University, Vol. 57, No. 1, Feb. 2010.
- "Morphological Changes Analysis for Nile Bed at Aswan Bridge Area Using GIS", Ain Shams Journal of Civil Engineering, March 2010
- “Developing Intensity-Duration-Frequency Curves in Scarce Data Region: An Approach using Regional Analysis and Satellite Data”, journal of Engineering, March 2011
- “Adaptation of Surface Water Modeling System for Sediment Transport Investigations in Lake Nasser”, Nile Water Science & Engineering Journal, May 2011
- “Assessment of Flash Floods Flowing To Nile Main Stream Between Aswan And Assiut”, Al Azhar Journal, Oct. 2011.
- "Flash Flood Risk Assessment Using Morphological Parameters", ASCE-EGS, VI International Conference on Environmental Hydrology and Port Engineering, 2012
- "Reliability Assessment of Water Structures Subject To Data Scarcity Using The SCS-CN Model", Canadian Society of Civil Engineering (CSCE) 2013 Annual Conference, May-June, 2013
- "Sustainable Water Management for seasonal rivers deltas, Case study: Coporolo River, Angola", International Journal of Research and Reviews in Applied Sciences, Vol. 15, Issue 3, June, 2013

- "Flood Plain Mitigation in Arid Regions Case Study South of Al-Kharj City, Saudi Arabia", International Journal of Research and Reviews in Applied Sciences, Vol. 16, Issue 1, July, 2013
- "Flash Flood Risk Assessment Using Morphological Parameters In Sinai Peninsula ", Open Journal of Modern Hydrology (OJMH), Vol.3, No.3, July, 2013.
- "Development of a GIS Tool For Rainfall-Runoff Estimation", International Journal Of Innovative Research In Advanced Engineering (IJIRAE), Vol. 1, Issue 10, Nov. 2014.
- "Evaluation of Integrated 1D&2D Storm Drainage Model", Al Azhar Journal, August 2014.
- "Evaluation of water intake location suitability using hydrodynamic modeling", River flow the 7th International Conference on Fluvial Hydraulics, September 2014, Switzerland.
- "Sensitivity Analysis For GSSha Model Parameters", Al Azhar Journal, October 2014.
- "Effect of Elevation Data Accuracy on Storm Drainage Schemes, Lagos, Nigeria", Natural Resources (NR), Vol.6, No.7, July, 2015
- "Evaluation of water intake location suitability using a hydrodynamic approach", Journal of Applied Water Engineering and Research, Jan 2016.
- "Reliability assessment of water structures subject to data scarcity using the SCS-CN model", Hydrological Sciences Journal, 61:4, 696-710, Feb 2016
- "Assessment of Surface Runoff Change Due to Urbanization Growth in Heliopolis Basin", IOSR Journal of Environmental Science, Toxicology and Food Technology, Volume 11, Issue 4, PP 90-95, April. 2017.
- "Developing Flash Floods Inundation Maps Using Remote Sensing Data, a Case Study: Wadi AL-Arish, Sinai, Egypt", American Journal of Engineering Research, Volume-6, Issue-5, pp-172-181, May 2017.
- "Evaluating evaporation rate from high Aswan Dam Reservoir using RS and GIS techniques", International Network for Scientific Information, Vol. : 21, pp 285–293, 2018.
- "Urbanization Growth Effect on Hydrological Parameters in Mega Cities", 1st Conference of the Arabian Journal of GeoScience (CAIG), 11-15 Nov., 2018.
- "Investigating the encroachments impact on Nile River Hydrodynamic and Morphology, Journal of Environmental science, Article 3, Volume 38, Issue 1, Spring 2017, Page 39-64
- "Simulating Flood Urban Drainage Networks Through 1D/2D Model Analysis", Journal of Water Management Modeling, Vol. 26, Oct. 2018.
- "Impact of Reducing Rain Gauges Numbers on accuracy of Estimated Mean Areal Precipitation: a case study of the Meleha sub-Catchment, Sinai Peninsula, Egypt", Current Science International Journal, Volume 07, Issue 01, Jan.- Mar., 2018

- “Optimal Rainfall Network based on GSMaP Satellite Product”, Al Azhar Journal, Feb 2018.
- “Evaluation of Depression Storage Using Grid-Based GIS Model”, International Journal of Science and Research (IJSR), ISSN: 2319-7064, Volume 7 Issue 9, 258-289, September 2018.
- “Assessment of Depression Impact on Runoff Characteristics Using GIS Technique”, International Journal of Engineering and Applied Sciences (IJEAS) ISSN: 2394-3661, Volume-5, Issue-8, 89-92, August 2018
- “Modeling the Effect of Depression Areas on Outflow Hydrograph”, International Journal of Scientific & Engineering Research ISSN 2229-5518 Volume 10, Issue 2, 465-469 February-2019.

ATTENDED COURSES AND WORKSHOPS

1. Regional Workshop on “Water - Energy - Food - NEXUS in MENA Region”, Aswan, Egypt. November 11-17, 2018
2. Regional Workshop on “Water Scarcity: Risks and Solutions” Sousse, Tunisia, April 23-28, 2018
3. The Third International Symposium on Flash Floods in Wadi Systems “Disaster Risk Reduction and Water Harvesting in the Arab Region”, German University of Technology in Oman, Muscat, Sultanate of Oman December 5–7, 2017
4. Regional Expert Workshop on “Water Efficient Cities” Marrakech, Morocco, November 03-08, 2017
5. Regional Workshop On “Solutions to water challenges in MENA-Region” Cairo, Egypt April 25-30, 2017
6. Expert work shop on “Water Challenges in MENA Region 2016-2050” Aqaba, Jordan (2016).
7. Expert Workshop on “Sustainable Urban Water Management and Water Sensitive Cities”, Sharm El-Sheikh, Egypt (2015).
8. Regional Workshop on “Urban water management & water demand management”, Antalya, Turkey (2014).
9. Sustainable Management of Hydrological Systems in Arid and Semi-Arid Regions, Karak, Jordan (2013).
10. Sustainable Water Management In African Countries, UNESCO, Kisumu, Kenya. (2012)
11. ENPM First National Workshop, Alexandria, Egypt (2012)
12. Water Resources Planning, UNESCO-IHE, Delft, Netherlands. (2008)
13. Application of GIS in water resources, Department of Engineering Hydrology, RWTH University, Aachen, Germany. (2007)
14. Arc GIS Intensive course, Braunschweig University, Institute of water resources, Braunschweig, Germany.(2006)
15. Soft Skills short courses: (Creative Thinking, Self-Management, Problem Solving, Communication Skills and Mind Mapping). Cairo, Egypt. (2004-2006)
16. Enhancing Data Analysis and Presentation Skills for Engineers, Ain Shams University, Cairo, Egypt.(2005)
17. Arc GIS Introduction, Basic and Advanced Courses, Ain Shams University, Cairo, Egypt.(2004/2005)

TRAINING AND TEACHING EXPERIENCE

Teaching undergraduate and postgraduate students since 1998:

- Design of Water Structures. (Culverts, Bridges, Siphons, Aqueducts, Regulators, Navigation locks and retaining walls of different types)
- Engineering Hydrology and Storm Drainage.
- Geographic Information System "GIS".
- Irrigation and Drainage Engineering.
- Fluid Mechanics and Hydraulics.
- Dam Engineering.

□(**2008, 2011, 2013, 2017**)

"Infrastructures, Waterfronts, and Coastal Protection" course instructor for Abu Dhabi National Oil Company (ADNOC) - ADMA-OPCO, National Consulting Bureau (NCB), Abu Dhabi.

□(**MARCH 2009**)

"GIS Mapping and Remote Sensing" for Saudi National Authority members, ECO Man, Consultancy, Training and Solutions, Cairo.

□(**JUNE 2010**)

"Design And Management Of Surface Irrigation Systems" for Saudi National Authority members, ECO Man, Consultancy, Training and Solutions, Cairo.

□(**JULY 2010**)

"Designing and analyzing Water Networks using Computer Applications" for Saudi National Authority members, ECO Man, Consultancy, Training and Solutions, Cairo.

□(**2004 UP TILL NOW**)

Arc GIS instructor at Ain-Shams University
Faculty of Engineering for both undergraduate and postgraduate students.

AWARDS AND MEMBERSHIPS

- Member of the “International Scientific Association for Sustainable Management of Water Resources”, EXCEED-SWINDON (2018)
- MSP fellowship to attend short course in UNESCO-IHE, Delft, Netherlands (April 2015).
- NFP fellowship to attend short course in UNESCO-IHE, Delft, Netherlands (March 2008).
- 4th best conference paper, ASCE-EGS, VI International Conference on Environmental Hydrology and Port Engineering, 2012.
- 2nd best conference paper, ASCE-EGS, IV International Conference on Environmental Hydrology and Port Engineering, 2009.
- The University Award as one of the best demonstrators (2001).
- Egyptian Engineers Syndicate Awards for Graduated students (1998).
- Graduated Students Certificate (non official) as the best Teacher Assistant in the Civil Department, Faculty of Engineering, Ain Shams University (2003/2004 and 2004/2005).