

Introduction

Earth has limited water resources, which are varied spatially and temporally. In addition to that, stress on water resources has been increasing day by day. Watershed is the basic scientific unit for planning and management of water resources. Quantitative assessment of various hydrological processes in the watershed and qualitative assessment of water resources like sediment yield, estimation of non-point source pollution loads in the watershed are very important for sustainable planning and management of water resources. Many watershed models are available for modeling of the quantitative and qualitative processes in the watersheds. In those models, SWAT (Soil and Water Assessment Tool) is gained the international acceptance as a robust interdisciplinary watershed modeling tool. This model is available in public domain. It is a continuous time model that operates on a daily time step at watershed scale. SWAT can be used to simulate at the watershed scale water and nutrients cycle in areas whose dominant land use is agriculture. It can also help in assessing the best management practices in watershed for conservation of soil and water resources.

SWAT model is included in the curriculum of many universities throughout the world to understand the various aspects of watershed modeling methods which are useful in effective planning and management of soil and water resources of the watershed. Different aspects of SWAT model and its applications are part of the course syllabus for remote sensing and GIS, water resources engineering and environmental engineering graduate students of Civil Department of NIT Warangal. Doctoral and graduate students are also using the SWAT model in their thesis and dissertation works. This training program is planned under GAIN scheme to give thorough knowledge in SWAT model concepts and its applications for the graduate students, scholars, faculty and field engineers.

Prof. Raghavan Srinivasan of Texas A&M AgriLIFE Research is the main resource person for this course. Main contents of this course are watershed characterization, quantitative and qualitative aspects in the watersheds, modeling the processes of watershed, SWAT model introduction, model inputs preparation, model calibration and validation, model output analysis, SWAT-CUP calibration approach, climate change impact analysis using SWAT and case studies of SWAT model application. Hands on training will be given to the participants on SWAT model using QGIS and QSWAT.

Modules

A: Watershed processes and modeling concepts, SWAT model concepts and practical sessions (12th to 16th December 2016; 15 Lectures & 5 Lab. Sessions)

B: SWAT model applications, case studies, research problems formulation with SWAT (19th to 23rd December 2016; 15 Lectures & 5 Lab. Sessions)

Number of participants for the course will be limited to fifty.

International Expert:



Prof. R. Srinivasan, is a professor at Texas A&M University and director of the Spatial Sciences Laboratory at Texas A&M (<http://ssl.tamu.edu/~people/r-srinivasan/>). He has become known and respected throughout the world for his developmental work with spatial sciences and computer-based modeling, especially the Soil and Water Assessment Tool or SWAT model. His research and its applications have contributed to long-lasting changes in natural resource assessments and development of management system options, currently being used in more than 90 countries. He is recipient of 2014-2015 Regents Fellow Service Award, 2015 College of Agriculture Distinguished Agriculture Alumni Award, Purdue University, 2014. He published more than 200 articles in Journal and conferences on the various applications of SWAT. His research interests include SWAT model enhancement, development of real time flood forecast systems with SWAT, integration of climate models with SWAT and decision support systems with SWAT.

Institute Expert:



K. Venkata Reddy, is a assistant professor in Civil Engineering Department at National Institute of Technology Warangal. He is carrying out research on watershed modelling applications and climate change impact on water resources. He is carried out post doctoral research work at Texas A&M University He is actively working in research aspects of integrating the SWAT model with the Climate Models for effective study of watershed processes under climate change conditions. He has published more than 50 research papers in National and International conferences and journals in field of geospatial applications in different domains with main emphasis on water resources.

Who can Participate:

Registration is open to:

- Field engineer or research scientist working in the fields of hydrology, water resources management, water pollution and climate change impact.
- Student or faculty from academic institution interested in learning how to work/carrying out research in qualitative and quantitative assessment of the water resources.

How to Register?

Stage -1:

Web(Portal) Register:

Visit GIAN Website at the link:

<http://www.gian.iitkgp.ac.in/GREGN/index> and create login User ID and Password. Fill up the blank registration form and do web registration by paying **Rs 500/-** online through **Net Banking / Debit / Credit** card. This provides him/her with life time registration to enroll in any number of the GIAN courses offered.

Stage -2:

Course Registration(Through GAIN Portal):

Log in to the GIAN portal with the user ID and password created. Click on 'Course Registration' option given at the top of the registration form. Select the course titled "**Quantitative And Qualitative Assessment Of Water Resources Using SWAT**" from the list and click on 'Save' option. Confirm your registration by Clicking on 'Confirm Course'.

Registration Fees:

Faculty and scientists	Rs 4000/-
Participants from industry/ Training organizations/ consultancy firms	Rs 8000/-
Students and research scholars	
• Without award of grade	Rs 1000/-
• With award of grade	Rs 2000/-
Student participants from abroad	USD 100
Other participants from abroad	USD 200

The registration fee includes instructional materials, tutorials, laboratory and computer use, free internet facility, working lunch, mid sessions tea and snacks. Outstation participants will be provided accommodation and boarding in visitors Block/Hostel in the campus on payment.

Selection and Mode of Payment

Selected candidates will be intimated through Email. They have to remit the necessary course fee to the Bank as per the details given below. Outstation participants requiring accommodation and boarding facilities have to pay Rs.4000/- in addition to the course fee.

Account Name	GIAN NITW
Account Number	62447453600
Bank	State Bank of Hyderabad
Branch	REC Warangal (NIT Campus)
Branch Code	20149
IFSC	SBHY0020149
MICR Code	506 004 011
SWIFT Code	SBHYINBB018

*Candidates registering early will be given preference in short listing process.

For any queries regarding registration of the course, please contact the Coordinators:

Course Coordinators

Dr. K. Venkata Reddy

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Course details is also available at:

<http://www.gian.iitkgp.ac.in/files/brochures/BR145>

[9347696SWATModel_CED_KV_Reddy.PDF](http://www.gian.iitkgp.ac.in/files/brochures/9347696SWATModel_CED_KV_Reddy.PDF)

<http://www.gian.iitkgp.ac.in/GREGN>

About GIAN Courses

MHRD, Govt. of India has launched an innovative program titled 'Global Initiative of Academic Networks'(GIAN) in Higher Education, in order to garner the best international experience into our system. As a part of this, internationally renowned Academicians and Scientists are invited to augment the country's academic resources, accelerate the pace of quality reforms and elevate India's scientific and technological capacity to global excellence.

About the Civil Engineering Department

The Department of Civil Engineering with four divisions offers an undergraduate program in Civil Engineering and seven postgraduate programs. The Department has experienced faculty and well-established laboratories. The Department has collaborating with major government departments, industries and R&D organizations.

About the Institute and Warangal

National Institute of Technology (formerly Regional Engineering College), Warangal is the first among 17 RECs setup as joint venture of the Government of India and the state government. Over the years the college has established itself as a premier Institution imparting technical education of a very high standard leading to the B. Tech degrees in various branches of engineering and M. Tech and Ph. D programs in various specializations. With a view to give further impetus to the technological education, the Central Govt. upgraded the RECs into NITs, and conferred the Deemed to be University status.

Warangal is known for its rich historical and cultural heritage. It is situated at a distance of 140Km. from Hyderabad. Warangal is well connected by rail and road. National Institute of Technology campus is 2 Km. away from Kazipet railway junction and 12Km. away from Warangal railway station. Participants are advised to alight either at Kazipet or Warangal depending upon the train of travel. The local weather during December is cold. The average temperature will be about 30 degree Centigrade during day and about 20 degree Centigrade during night.



Two Week GIAN Course On

QUANTITATIVE AND QUALITATIVE ASSESSMENT OF WATER RESOURCES USING SWAT

12th December- 23rd December 2016

Call for Registration and Participation

International Faculty

Prof. R. Srinivasan

Director of the Spatial Sciences

Laboratory, Texas A&M University

College Station, Texas, USA

Coordinators

Dr. K. Venkata Reddy

Prof. Dr. Deva Pratap

Organized by

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