

Registration Form

Geostatistical Analysis of Environmental Data

February 19-23, 2018

Under

Global Initiative of Academic Networks (GIAN), MHRD

Name:.....

Designation:.....

Department:.....

Address:.....

.....

City:.....Pin-code:.....

Telephone:.....

Email:.....

Category of the Applicant:

- Student/Research Scholar of NITK
 Student/Research Scholar of other Institutes
 Faculty of other Institutes
 Employees of Government Organizations
 Foreign Delegates
 Industry Participants

NITK Accommodation required: Yes No

Payment Details:.....

Amount (Rs.):.....

DD. No. and Date:.....

DECLARATION BY THE PARTICIPANT

The information furnished above is true to the best of my knowledge. If selected, I shall attend the program for the entire duration. I also undertake the responsibility to inform the Coordinator sufficiently in advance, in case I am unable to attend the program.

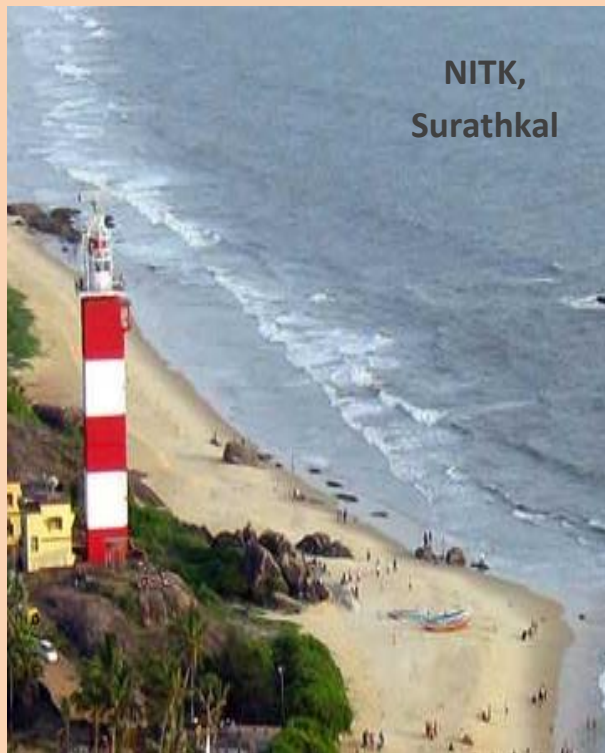
Date: _____ Signature of Applicant

SPONSORSHIP CERTIFICATE

Certified that Dr./Mr./Ms.....
.....is an employee of our institute and is hereby permitted to attend the Five-day Short Course on "Geostatistical Analysis of Environmental Data", if selected.

Place: _____ Signature (with seal)

Date: _____ Head of the Institution



NITK,
Surathkal

Address for Correspondence:

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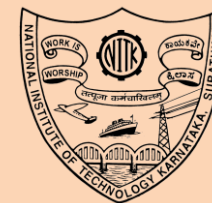
Student Coordinators:

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A Short Term Course on Geostatistical Analysis of Environmental Data

February 19 - 23, 2018

Organized at



Department of Applied Mechanics and Hydraulics
National Institute of Technology Karnataka, Surathkal

Supported by



सत्यमेव जयते
Government of India
Ministry of Human Resource
Development

Global Initiative of Academic Network
(GIAN)

Dr. Amba Shetty Dr. Pruthviraj U.
Coordinators

Department of Applied Mechanics and Hydraulics
NITK Surathkal, P.O. Srinivasnagar – 575 025, INDIA.
www.nitk.ac.in

GIAN – MHRD:

“GIAN” program started by Ministry of Human Resource Development, Govt. of India aims at tapping the talent pool of Scientist and Entrepreneur Internationally to encourage their engagement with the institutes of higher education in India so as to augment the country’s existing academic resources, accelerate the pace of quality reform, and elevate India’s scientific and technological capacity to global excellence. Under the scheme “GIAN”, the Department of Applied Mechanics and Hydraulics, NITK is going to organize a week program (February 19-23, 2018), where in an internationally acclaimed expert with proven knowledge, experience and skills in research, teaching as well as training will deliver lectures and discuss about the issues related to his areas of research with participating researchers /scientists.

About the course:

This course will introduce a suite of geostatistical methods for the spatial analysis of environmental data. Participants will learn how to apply geostatistics for the description of spatial patterns and identification of scales of variability, spatial interpolation and stochastic modelling of environmental attributes, creation of risk maps and their use in decision-making. After completion of this course you will be well prepared to import, visualize and analyze your own data in a space-time information system. Lectures will alternate with analysis of environmental data using SpaceStat, a GIS software developed by BioMedware, Inc.

Teaching Faculty:

Dr. Pierre Goovaerts studied at the Catholic University of Louvain-la-Neuve (Belgium) and at Stanford University, where he wrote the textbook entitled Geostatistics for Natural Resources Evaluation published by Oxford University Press in 1997. After five years on the Faculty at the University of Michigan, he became in 2002 Chief Scientist for the R& D company, BioMedware, Inc, and he created his own consulting company, PGeostat, LLC. Dr. Goovaerts has authored more than 170 referred papers in the field of theoretical and applied geostatistics, and he is a reviewer for 50 international journals. He has taught numerous short courses in US attended by academics, consultants and federal employees. He acts as a consultant for the Environmental Protection Agency, the Nuclear Regulatory Commission and he is bringing his expertise to numerous projects dealing with the characterization of air, soil and water pollution and its impact on human health. For the last ten years Dr. Goovaerts has been a Courtesy Associate Professor at the University of Florida, Soil and Water Science Department. Since 2008 he is an off-site employee for the International company CSC (Computer Sciences Corporation), providing expertise on the geo-statistical modelling of contaminated sediments in rivers and lakes. For more information about Dr. Goovaerts, visit his home page at: <http://pgeostat.com/>



Course Layout:

Feb 19– Monday: Lecture 1 - 9:30 to 10:30 AM

Introduction, History of Geostatistics, overview of geo-statistical approach and range of potential applications

Lecture 2 - 10:45 to 11:45 AM

Common misconceptions about Geostatistics, Data transformation and detection of spatial outliers.

Tutorial 1 - 2:00 to 5:00 PM

Exploratory spatial data analysis: Formatting the data, data mapping, histograms & scatter plots and local cluster analysis.

Feb 20– Tuesday: Lecture 3 - 9:30 to 10:30 AM

Concepts of correlograms and semivariograms, types of anisotropy

Lecture 4 - 10:45 to 11:45 AM

Semivariogram modelling, linear model of regionalization.

Tutorial 2 - 2:00 to 5:00 PM

Structural Analysis: Computing Experimental Semivariograms, directional vs. omnidirectional semivariograms, modelling semivariograms.

Feb 21 – Wednesday: Lecture 5 - 9:30 to 10:30 AM

Concept of Kriging, types of kriging (simple, ordinary, universal), jack-knife and cross-validation.

Lecture 6 - 10:45 to 11:45 AM

Change of spatial support with kriging: upscaling, downscaling and side-scaling.

Tutorial 3 - 2:00 to 5:00 PM

Spatial Interpolation: Univariate kriging, block kriging, area-to-point kriging.

Feb 22 – Thursday: Lecture 7 - 9:30 to 10:30 AM

Incorporating secondary information in spatial interpolation: stratified kriging, residual kriging, kriging with an external drift.

Lecture 8 - 10:45 to 11:45 AM

Spatial filtering using kriging, geographically-weighted regression.

Tutorial 4 - 2:00 to 5:00 PM

Multivariate spatial interpolation: kriging with an external drift, factorial kriging, geographically-weighted regression.

Feb 23 – Friday: Lecture 9 – 9:30 to 10:30 AM

Modeling local uncertainty, parametric vs non-parametric approaches

Lecture 10 – 10:45 to 11:30 AM

Modelling spatial uncertainty, simulation versus estimation.

Afternoon Session - 2:00 to 5:00 PM

Examination for Student participants/Presentation by Participants

Important Dates:

Registration Begins	2 nd December, 2017
Registration closes	26 st December, 2017
Selection Notification	27 th December, 2017
Last date for fee Payment	5 th January, 2018

Course Registration fee (excluding boarding and lodging):

Faculty/Student/Research Scholar of NITK	Nil
Student/Research Scholar outside of NITK	Rs. 5000
Faculty outside of NITK	Rs. 8000
Employees of Government Organizations	Rs. 10,000
Industry Participants (maximum 4 members)	Rs. 20,000
Foreign Delegates	USD 700

Payment Mode:

- The intake of participants is limited to 50 and shall be decided as per the decision of the event coordinators.
- Once an applicant is selected, he/she/they can complete the payment by paying the applicable fee through a **crossed DD** drawn in favor of **Director, NITK Surthkal**, payable at any nationalized bank at Surathkal / Srinivasnagar, along with the duly filled registration section attached to this brochure.
- The final registration should be done before the last date of payment.
- Applicants can send a scanned copy of the DD and duly filled registration to the coordinator via email before the last date of payment (geostats2018gian@gmail.com).

Accommodation:

A limited number of accommodation on campus is available on a first come first served basis. Interested participants will have to inform the event coordinator in advance and pay the additional fees as per the guest house rules and regulations. Type of accommodation and associated fees are listed below :

Type of Accommodation	NITK in-campus Guest House		
	IH (Non-AC)	JC Bose (AC)	C.V. Raman (AC)
Single	Rs. 200	--	--
Double	Rs. 300	Rs. 600	Rs. 700