National Institute of Technology Karnataka, Surthakal, Srinivasnagar, Mangalore – 575025

Registration Form

Geostatistical Analysis of Environmental Data
December 05-09, 2016
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 other Institutes
- ☐ Faculty of other Institutes
- ☐ Employees of Government Organizations
- ☐ 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.

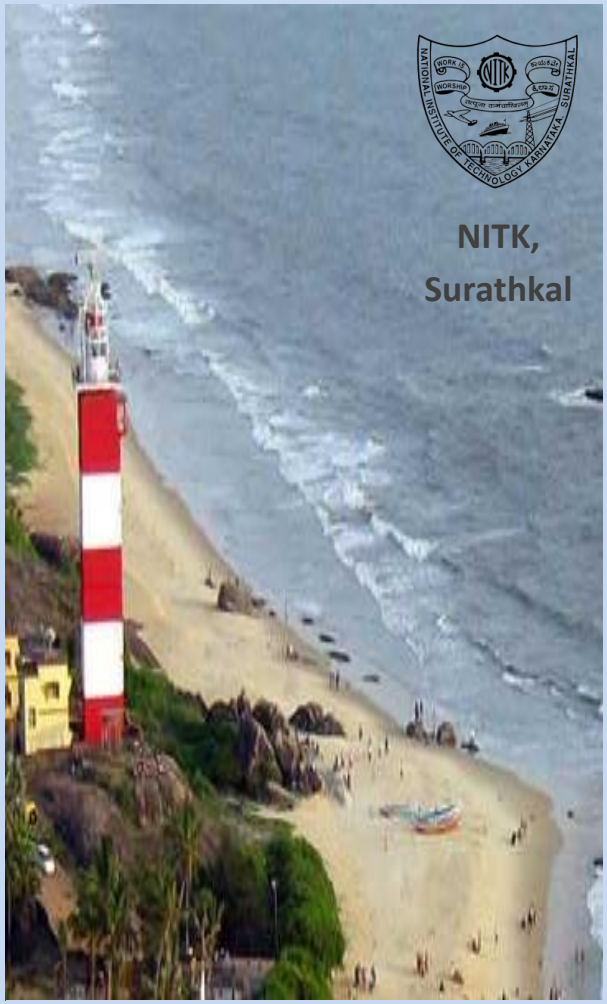
Date: Signature of Applicant

SPONSORSHIP CERTIFICATE

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

Place: Signature (with seal)
Date: Head of the Institution

Participants who attend the entire course will receive a participation certificate.



Address for Correspondence

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A short course on

Geostatistical Analysis of Environmental Data

December 05-09, 2016

Organized at

Department of Applied Mechanics and Hydraulics

National Institute of Technology Karnataka, Surtahkal

Supported by

सत्यमेव जयते
Government of India
Ministry of Human Resource Development

Global Initiative of Academic Network (GIAN)

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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 (December 05-09, 2016), 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

Dec 5 – 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.
Dec 6 – 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.
Dec 7 – 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.
Dec 8 – 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.
Dec 9 – 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.

Important Dates

Registration Begins	26th September, 2016
Registration closes	21st October, 2016
Selection Notification	24th October, 2016
Last date for fee Payment	4th November, 2016

Course Registration fee (excluding boarding and lodging):

Faculty/Student/Research Scholar of NITK	N/A
Student/Research Scholar outside of NITK	Rs. 3000
Faculty outside of NITK	Rs. 5000
Employees of Government Orgaizations	Rs. 10,000
Industry Participants (maximum 4 members)	Rs. 20,000

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.

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			Hotel Lalith Suratkal	Hotel Suraj International Suratkal	Hotel Maharaja Suratkal	Hotel Red Rock Mukka
		IH	JC Bose	Vikram Sarabhai				
Single	AC	-	-	-	-	1400	1200	-
	Non-AC	600	-	-	-	900	750	-
Double	AC	-	1500	2000	1500	3000	2500	3500
	Non-AC	1200	-	-	-	2400	1500	-