INSTITUTE OF SPACE TECHNOLOGY, ISLAMABAD

Course Outline

Date: 28/01/16
At: 15:40

Department: **SPACE SCIENCE**

Batch: MS-3 (RSGS)
Session Year: SPRING-2015
Faculty : DR. ASAD ALI
Course: **RG 732 Geostatistics**

Semester: 2nd Semester
Section: A
Submit Date: 02/04/15
Credit Hour: 3

COURSE DESCRIPTION
not entered

TEXT AND MATERIALS

Textbook:

References:

Chapter & Topic Detail

Chapter	Topic
Geo-statistical computing	What is geostatistics?
	The added value of geostatistics
	Feature and geographic spaces
	Geostatistical computing: inventory of packages
	The R Project for Statistical Computing: what and why?
	Exercise: Introduction to the R environment and S language
Exploring and visualizing spatial	Visualizing spatial structure: point distribution, postplots, quantile plots
	Visualizing regional trends
	Visualizing local spatial dependence: h-scatterplots, variogram cloud, ex-
	Visualizing anisotropy: variogram surfaces, directional variograms
Modelling spatial structure from	Trend surfaces
	Theory of random fields
	Models of spatial covariance
	Variogram analysis; variogram model fitting
Spatial prediction from point samples (I)	A taxonomy of spatial prediction methods
	Non-geostatistical prediction
	Introduction to Ordinary Kriging
	Note: the derivation of the kriging equations is deferred to the next lecture.
Spatial prediction from point sam	Derivation of the Ordinary Kriging (OK) system: (1) regression (2) minimization
	Simple Kriging (SK)
	Block Kriging
	Universal Kriging (UK)
	Derivation of the Universal Kriging system: (1) regression (2) minimization
	Kriging transformed variables
	Kriging with External Drift (KED) and Regression Kriging (RK)
	Stratified Kriging (StK)
Assessing the quality of spatial	Assessment of model quality: overview
	Model evaluation with an independent data set

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Assessing the quality of spatial	Cross-validation
	Kriging prediction variance
	Spatial simulation

ASSESMENT:

ASSIGNMENT	**20%**
OHT	**30%**
FINAL	**50%**
Total:	**100%**