Geo Engineering & Geo Informatics (GG)

Engineering Mathematics

Linear Algebra: Matrix algebra, Systems of linear equations, Eigen values and eigenvectors.

Calculus: Functions of single variable, Limit, continuity and differentiability, Mean value theorems, Evaluation of definite and improper integrals, Partial derivatives, Total derivative, Maxima and minima, Gradient, Divergence and Curl, Vector identities, Directional derivatives, Line, Surface and Volume integrals, Stokes, Gauss and Green's theorems.

Complex variables: Analytic functions, Cauchy's integral theorem, Taylor and Laurent series.

Probability and Statistics: Definitions of probability and sampling theorems, Conditional probability, Mean, median, mode and standard deviation, Random variables, Poisson, Normal and Binomial distributions.

Geo-Engineering

Continents. Earth composition. Earth - Orbit,

Oceans - Depth, Bottom, Relief

Rocks, Kinds of rocks, minerals & physical properties of minerals.

Surveying methods: Topographic surveying, Theodolite applications, topographic sheets, aerial photo formats

Maps: map projections, cartography

Physical principles of remote sensing, electromagnetic spectrum

GIS concepts and applications

Study of rain fall, estimation of run-off and evapotranspiration, water table

Environment - meaning, scope, components Environments.

Soils-texture, strengths, porosity and permeability

Programming in C: variables, data types, expressions, control structures, arrays, functions, pointers, structures.

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