

MGP 456: HYDROGEOLOGY, GEO-STATISTICS and COMP APPL. (Lab)

Skills, employability and entrepreneurship: These are advanced as well applied subjects in terms of studying the entire water cycle by using multi-disciplinary data with the help of computer and allied systems by making use of huge hydro-geological data collected from insitu monitoring artificial satellites launched to the space and aircrafts. There is good scope of this subject in terms of employability in water resources and exploration in different government organizations and MNCs. Students can start their own entrepreneurship.

Hydrogeology (Lab, Soft Core)

- 1) Preparation of **Isohyetal maps** and calculation of depth of rainfall.
- 2) Calculation of **Potential evapotranspiration**.
- 3) Calculation of Actual evapotranspiration
- 4) Calculation of **water budget/water balance**.
- 5) Determination of **aquifer parameters**.
- 6) Calculation of **Specific capacity of dug wells and bore wells**.
- 7) Generation of **hydrogeomorphological maps**.
- 8) Generation of **groundwater potential zone maps**.
- 9) Interactive sessions of teaching to enhance students-teacher interactions through hands-on demonstrations and exercises in the recent advancement of the subject related to the curriculum.

Geo-statistics and Computer Applications (Lab)

- 1) Mean, median and mode.
- 2) Quartiles, deciles and percentages.
- 3) **Correlation co-efficient, regression analysis and skewness**.
- 4) Measures of dispersion and other **basic statistical parameters**.
- 5) **Cluster analysis**, factor analysis and contouring.
- 6) Use of application software (MS Excel, SPSS, Minitab etc.) for graphical representation of statistical data and construction of bar diagrams, pie diagrams, rose diagrams histograms, scatter plots etc.
- 7) Programming languages and operating systems. Power Point slide preparation.
- 8) Computer aided design and graphics.
- 9) Components of a computer (hardware and software), Input-output devices (storage devices). Evolution of computers. Principles of data processing: Word processing,
- 10) Programming languages and operating systems. Flow chart, Algorithm.
- 11) Interactive sessions of teaching to enhance students-teacher interactions through hands-on demonstrations and exercises in the recent advancement of the subject related to the curriculum.