



DEMAND

PAVIATH INTEGRATED SOLUTION

CIVIL ENGG

CIVIL UNIV

GROUND WATER HYDROLOGY

Paviath ONLINE

◆ CIVIL UNIVERSITY ◆ THIRD YEAR II SEMESTER ELECTIVE III ◆ CODE AG0128

UNIT - I
 GROUND WATER OCCURRENCE AND MOVEMENT; GROUND WATER HYDROLOGIC CYCLE, ORIGIN OF GROUND WATER, ROCK PROPERTIES EFFECTING GROUND WATER, VERTICAL DISTRIBUTION OF GROUND WATER, ZONE OF AERATION AND ZONE OF SATURATION, GEOLOGIC FORMATION AS AQUIFERS, TYPES OF AQUIFERS, POROSITY, SPECIFIC YIELD AND SPECIFIC RETENTION, PERMEABILITY, DARCY'S LAW, STORAGE COEFFICIENT, TRANSMISSIVITY, DIFFERENTIAL EQUATION GOVERNING GROUND WATER FLOW IN THREE DIMENSIONS DERIVATION, GROUND WATER FLOW EQUATION IN POLAR COORDINATES SYSTEM, GROUND WATER FLOW CONTOURS THEIR APPLICATIONS.

UNIT - II
 ANALYSIS OF PUMPING TEST DATA-I: STEADY FLOW GROUND WATER FLOW TOWARDS A WELL IN CONFINED AND UNCONFINED AQUIFERS- DUPUIT'S AND THEISM'S EQUATIONS, ASSUMPTIONS, FORMATION CONSTANTS, YIELD OF AN OPEN WELL INTERFACE AND WELL TESTS. UNSTEADY FLOW TOWARDS A WELL - NON EQUILIBRIUM EQUATIONS-THEIS'S SOLUTION-JACOB AND CHOW'S SIMPLIFICATIONS, LEAK AQUIFERS.

UNIT - III
 SURFACE AND SUBSURFACE INVESTIGATION: SURFACE METHODS OF EXPLORATION- ELECTRICAL RESISTIVITY AND SEISMIC REFRACTION METHODS, SUBSURFACE METHODS GEOPHYSICAL LOGGING AND RESISTIVITY LOGGING, AERIAL PHOTOGRAMMETRY APPLICATIONS ALONG WITH CASE STUDIES IN SUBSURFACE INVESTIGATION.

UNIT - IV
 ARTIFICIAL RECHARGE OF GROUND WATER: CONCEPT OF ARTIFICIAL RECHARGE RECHARGE METHODS, RELATIVE MERITS, APPLICATIONS OF GIS AND REMOTE SENSING IN ARTIFICIAL RECHARGE OF GROUND WATER ALONG WITH CASE STUDIES.

UNIT - V
 SALINE WATER INTRUSION IN AQUIFERS: OCCURRENCE OF SALINE WATER INTRUSIONS, GHYBEN-HERZBERG RELATION, SHAPE OF INTERFACE, CONTROL OF SEAWATER INTRUSION.

TEXT BOOKS:
 1. GROUND WATER HYDROLOGY BY H. M. RAGHUNATH, WILEY EASTERN LTD.
 2. INTRODUCTION TO HYDRAULICS & HYDROLOGY: WITH APPLICATIONS FOR STORMWATER MANAGEMENT, 4TH EDITION, CENGAGE LEARNING.
REFERENCES:
 1. GROUND WATER HYDROLOGY BY DAVID KEITH TODD, JOHN WILEY & SONS, NEW YORK.
 2. GROUND WATER BY BAWVER, JOHN WILEY & SONS.
 3. HYDROLOGY BY SUBRAMANYA K.



STC APM

SYLLABUS COACHING
 TRAINING - 2/UNIT TRAINING
 SELF - 4/UNIT ASSIGNMENT
 PRESENTATION - 2/UNIT
 SHOWTIME - 2/UNIT



ASCON RENGA

SYLLABUS PERIOD
 TRAINING - 2/2 HRS/UNIT
 REMOTE - 2/2 HRS/UNIT
 DURATION - SEMESTER
 ONLINE/REMOTE ACCESS



ARCADIA BIM

FEATURES
 TRAINING BY IND. PROFESSIONAL
 INDUSTRY APPLICATION
 TRAINER OPPORTUNITY
 CERTIFICATION