



DEMAND

PAVIATH INTEGRATED SOLUTION

CIVIL ENGG

CIVIL UNIV

WATER RESOURCES ENGINEERING-I

Paviath ONLINE

◆ CIVIL UNIVERSITY ◆ THIRD YEAR I SEMESTER ◆ CODE A50122

UNIT I

INTRODUCTION TO ENGINEERING HYDROLOGY AND ITS APPLICATIONS. HYDROLOGIC CYCLE. TYPES AND FORMS OF PRECIPITATION. RAINFALL MEASUREMENT. TYPES OF RAIN GAUGES. COMPUTATION OF AVERAGE RAINFALL OVER A BASIN. PROCESSING OF RAINFALL DATA - ADJUSTMENT OF RECORD - RAINFALL DOUBLE MASS CURVE. RUNOFF- FACTORS AFFECTING RUNOFF - RUNOFF OVER A CATCHMENT- EMPIRICAL AND RATIONAL FORMULAE. ABSTRACTION FROM RAINFALL-EVAPORATION. FACTORS AFFECTING EVAPORATION. MEASUREMENT OF EVAPORATION- EVAPOTRANSPIRATION- PENMAN AND BLANEY & CRIDDLE METHODS -INFILTRATION. FACTORS AFFECTING INFILTRATION. MEASUREMENT OF INFILTRATION. INFILTRATION INDICES.

UNIT II

DISTRIBUTION OF RUNOFF - HYDROGRAPH ANALYSIS FLOOD HYDROGRAPH - EFFECTIVE RAINFALL - BASE FLOW- BASE FLOW SEPARATION - DIRECT RUNOFF HYDROGRAPH - UNIT HYDROGRAPH. DEFINITION, AND LIMITATIONS OF APPLICATIONS OF UNIT HYDROGRAPH. DERIVATION OF UNIT HYDROGRAPH FROM DIRECT RUNOFF HYDROGRAPH AND VICE VERSA - S-HYDROGRAPH. SYNTHETIC UNIT HYDROGRAPH.

UNIT-III

GROUND WATER OCCURRENCE. TYPES OF AQUIFERS. AQUIFER PARAMETERS. POROSITY. SPECIFIC YIELD. PERMEABILITY. TRANSMISSIVITY AND STORAGE COEFFICIENT. DARCY'S LAW. RADIAL FLOW TO WELLS IN CONFINED AND UNCONFINED AQUIFERS. TYPES OF WELLS.- WELL CONSTRUCTION - WELL DEVELOPMENT.

TEXT BOOKS:

1. ENGINEERING HYDROLOGY BY JAYARAM REDDY, LAXMI PUBLICATIONS PVT. LTD., NEW DELHI.

2. IRRIGATION AND WATER POWER ENGINEERING BY PUNMIA & LAL. LAXMI PUBLICATIONS PVT. LTD., NEW DELHI.

REFERENCES:

1. ELEMENTARY HYDROLOGY BY V.P.SINGH. PHI PUBLICATIONS.

2. IRRIGATION AND WATER RESOURCES & WATER POWER BY P.N.MODI. STANDARD BOOK HOUSE.

3. WATER RESOURCES ENGINEERING - I BY DR. G.VENKATA RAMANA. ACADAMIC PUBLISHING COMPANY.

4. IRRIGATION WATER MANAGEMENT BY D.K. MAJUNDAR. PRINTICE HALL OF INDIA.

5. IRRIGATION AND HYDRAULIC STRUCTURES BY S.K.GRAB.

6. APPLIED HYDROLOGY BY VEN TE CHOW. DAVID R. MAIDMENT LARRY W. MAYS TATA MC. GRAW HILL.

7. INTRODUCTION TO HYDROLOGY BY WARREN VIESSVANN, JR. GARYL. LEWIS, PHI.

UNIT-IV

NECESSITY AND IMPORTANCE OF IRRIGATION. ADVANTAGES AND ILL EFFECTS OF IRRIGATION. TYPES OF IRRIGATION. METHODS OF APPLICATION OF IRRIGATION WATER. INDIAN AGRICULTURAL SOILS. METHODS OF IMPROVING SOIL FERTILITY - CROP ROTATION. PREPARATION OF LAND FOR IRRIGATION. STANDARDS OF QUALITY FOR IRRIGATION WATER. SOIL-WATER-PLANT RELATIONSHIP. VERTICAL DISTRIBUTION OF SOIL MOISTURE. SOIL MOISTURE CONSTANTS. SOIL MOISTURE TENSION. CONSUMPTIVE USE. DUTY AND DELTA. FACTORS AFFECTING DUTY- DESIGN DISCHARGE FOR A WATER COURSE. DEPTH AND FREQUENCY OF IRRIGATION. IRRIGATION EFFICIENCIES-WATER LOGGING.

UNIT-V

CLASSIFICATION OF CANALS. DESIGN OF IRRIGATION CANALS BY KENNEDY'S AND LACEY'S THEORIES. BALANCING DEPTH OF CUTTING, IS STANDARDS FOR A CANAL DESIGN CANAL LINING. DESIGN DISCHARGE OVER A CATCHMENT. COMPUTATION OF DESIGN DISCHARGE RATIONAL FORMULA. SCS CURVE NUMBER METHOD. FLOOD FREQUENCY ANALYSIS- INTRODUCTORY PART ONLY. STREAM GAUGING - MEASUREMENT AND ESTIMATION OF STREAM FLOW.



APM Civil Engineering

STC APM

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



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



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FEATURES
TRAINING BY IND. PROFESSIONAL
INDUSTRY APPLICATION
TRAINER OPPORTUNITY
CERTIFICATION