

**DEMAND****PAVIATH INTEGRATED SOLUTION****CIVIL ENGG****CIVIL UNIV****HYDRAULICS AND HYRAULIC MACHINERY****Paviath ONLINE****◆ CIVIL UNIVERSITY ◆ SECOND YEAR II SEMESTER ◆ CODE A40III**

UNIT - I
 OPEN CHANNEL FLOW: TYPES OF FLOWS - TYPE OF CHANNELS - VELOCITY DISTRIBUTION - ENERGY AND MOMENTUM CORRECTION FACTORS - CHEZY'S, MANNING'S, AND BAZIN FORMULAE FOR UNIFORM FLOW - MOST ECONOMICAL SECTIONS. CRITICAL FLOW: SPECIFIC ENERGY-CRITICAL DEPTH - COMPUTATION OF CRITICAL DEPTH - CRITICAL SUB-CRITICAL AND SUPER CRITICAL FLOWS.
 NON UNIFORM FLOW - DYNAMIC EQUATION FOR G.V.F., MILD, CRITICAL, STEEP, HORIZONTAL AND ADVERSE SLOPES-SURFACE PROFILES-DIRECT STEP METHOD- RAPIDLY VARIED FLOW, HYDRAULIC JUMP, ENERGY DISSIPATION.

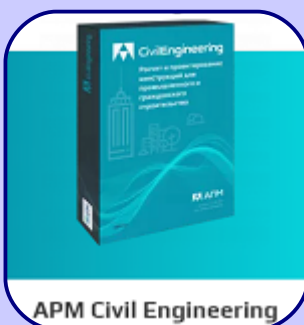
UNIT - II
 DIMENSIONAL ANALYSIS AND SIMILITUDE: DIMENSIONAL ANALYSIS-RAYLEIGH'S METHOD AND BUCKINGHAM'S PI THEOREM- STUDY OF HYDRAULIC MODELS - GEOMETRIC, KINEMATIC AND DYNAMIC SIMILARITIES-DIMENSIONLESS NUMBERS - MODEL AND PROTOTYPE RELATIONS.

UNIT-III
 HYDRODYNAMIC FORCE ON JETS : HYDRODYNAMIC FORCE OF JETS ON STATIONARY AND MOVING FLAT, INCLINED AND CURVED VANES. JET STRIKING CENTRALLY AND AT TIP, VELOCITY TRIANGLES AT INLET AND OUTLET, EXPRESSIONS FOR WORK DONE AND EFFICIENCY- ANGULAR MOMENTUM PRINCIPLE, APPLICATIONS TO RADIAL FLOW TURBINES, LAYOUT OF A TYPICAL HYDROPOWER INSTALLATION - HEADS AND EFFICIENCIES

UNIT-IV
 HYDRAULIC TURBINES: CLASSIFICATION OF TURBINES-PELTON WHEEL-FRANCIS TURBINE-KAPLAN TURBINE-WORKING, WORKING PROPORTIONS, VELOCITY DIAGRAM, WORK DONE AND EFFICIENCY, HYDRAULIC DESIGN, DRAFT TUBE - THEORY AND FUNCTION EFFICIENCY, GOVERNING OF TURBINES-SURGE TANKS-UNIT AND SPECIFIC TURBINES-UNIT SPEED-UNIT QUANTITY-UNIT POWER-SPECIFIC SPEED PERFORMANCE CHARACTERISTICS-GEOMETRIC SIMILARITY-CAVITATION.

UNIT - V
 CENTRIFUGAL-PUMPS: PUMP INSTALLATION DETAILS-CLASSIFICATION-WORK DONE-MANOMETRIC HEAD-MINIMUM STARTING SPEED-LOSSES AND EFFICIENCIES-SPECIFIC SPEED, MULTISTAGE PUMPS-PUMPS IN PARALLEL- PERFORMANCE OF PUMPS-CHARACTERISTIC CURVES- NPSH-CAVITATION, CLASSIFICATION OF HYDROPOWER PLANTS - DEFINITION OF TERMS - LOAD FACTOR, UTILIZATION FACTOR, CAPACITY FACTOR, ESTIMATION OF HYDROPOWER POTENTIAL.

TEXT BOOKS:
 1. OPEN CHANNEL FLOW BY K.SUBRAMANYA, TATA MC.GRAWHILL PUBLISHERS.
 2. FLUID MECHANICS, HYDRAULIC AND HYDRAULIC MACHINES BY MODI & SETH, STANDARD BOOK HOUSE.
 3. FLUID MECHANICS & FLUID MACHINES BY NARAYANA PILLAI, UNIVERSITIES PRESS.
REFERENCES :
 1. FLUID MECHANICS AND MACHINERY, C.S.P. DJHA, OXFORD UNIVERSITY PRESS
 2. ELEMENTS OF OPEN CHANNEL FLOW BY RANGA RAJU, TATA MC.GRAW HILL, PUBLICATIONS.
 3. FLUID MECHANICS AND FLUID MACHINES BY RAJPUT, S.CHAND BCO.
 4. OPEN CHANNEL FLOW BY V.T.CHOW, MC.GRAW HILL BOOK COMPANY.
 5. FLUID MECHANICS AND MACHINERY BY D. RAMDURGIA NEW AGE PUBLICATIONS.
 6. MECHANICS OF FLUIDS BY MERLE C. POTTER, DAVID C. WIGBERT,BASSEM H. RAMADAN, CENGAGE LEARNING.

**APM Civil Engineering****STC APM**

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

**ASCON RENG**

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

**ARCADIA BIM**

FEATURES
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