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PAVIATH INTEGRATED SOLUTION

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EARTH AND ROCKFILL DAMS AND SLOPE STABILITY

Paviath ONLINE

◆ CIVIL UNIVERSITY ◆ FOURTH YEAR I SEMESTER ◆ CODE A70I37

UNIT-I
 EARTH AND ROCKFILL DAMS: GENERAL FEATURES, SELECTION OF SITE: MERITS AND DEMERITS OF THE EARTH AND ROCK FILL DAMS, CLASSIFICATION OF EARTH DAMS, CAUSES OF FAILURE, SAFE DESIGN CRITERIA, INSTRUMENTATION IN EARTH DAMS: PORE PRESSURE MEASUREMENTS, SETTLEMENT GAUGES, INCLINOMETERS, STRESS MEASUREMENTS, SEISMIC MEASUREMENTS.

UNIT-II
 FAILURES, DAMAGES AND PROTECTION OF EARTH DAMS: NATURE AND IMPORTANCE OF FAILURE, PIPING THROUGH EMBANKMENT AND FOUNDATIONS, METHODS OF SEEPAGE CONTROL THROUGH EMBANKMENTS AND FOUNDATIONS, DESIGN CRITERIA FOR FILTERS, TREATMENT OF UPSTREAM AND DOWN STREAM OF SLOPES, DRAINAGE CONTROL, FILTER DESIGN.

UNIT-III
 SLOPE STABILITY ANALYSIS: TYPES OF FAILURE: FAILURE SURFACES - PLANAR SURFACES, CIRCULAR SURFACES, NON-CIRCULAR SURFACES, LIMIT EQUILIBRIUM METHODS, TOTAL STRESS ANALYSIS VERSUS EFFECTIVE STRESS ANALYSIS, USE OF BISHOP'S PORE PRESSURE PARAMETERS, SHORT TERM AND LONG TERM STABILITY IN SLOPES, TAYLOR CHARTS.

UNIT-IV
 METHODS OF SLOPE STABILITY: METHOD OF SLICES, EFFECT OF TENSION CRACKS, VERTICAL CUTS, BISHOP'S ANALYSIS, BISHOP AND MORGENSTERN ANALYSIS, NONCIRCULAR FAILURE SURFACES: JANBU ANALYSIS, SLIDING BLOCK ANALYSIS, SEISMIC STABILITY, STABILIZATION OF SLOPES: SOIL REINFORCEMENT (GEOSYNTHETICS/SOIL NAILING/ MICRO PILES ETC), SOIL TREATMENT (CEMENT/LIME TREATMENT), SURFACE PROTECTION (VEGETATION/EROSION CONTROL MATS/SHOTCRETE).

UNIT-V
 ROCKFILL DAMS: REQUIREMENTS OF COMPACTED ROCKFILL, SHEAR STRENGTH OF ROCKFILL, ROCKFILL MIXTURES, ROCKFILL EMBANKMENTS, EARTH-CORE ROCKFILL DAMS, STABILITY, UPSTREAM & DOWNSTREAM SLOPES.

TEXT BOOKS:
 1. SHERARD, WOODWARD, GIZENSKI AND CLEVENGER, EARTH AND EARTH-ROCK DAMS, JOHN WILEY & SONS, 1963
REFERENCES:
 1. BHARAT SINGH AND SHARMA, H. D. - EARTH AND ROCKFILL DAMS, 1999
 2. SOWERS, G. F. AND SALLEY, H. I. - EARTH AND ROCKFILL DAMS, WILLIAMS, R.C., AND WILLACE, T.S. 1965.
 3. ABRAMSON, L. W., LEE, T. S. AND SHARMA, S. - SLOPE STABILITY AND STABILISATION METHODS - JOHN WILEY & SONS. (2002)
 4. BROMHEAD, E. N. (1992), THE STABILITY OF SLOPES, BLACKIE ACADEMIC AND PROFESSIONAL, LONDON.
 5. CHRISTIAN, EARTH & ROCKFILL DAMS - PRINCIPLES OF DESIGN AND CONSTRUCTION, KUTZNER PUBLISHED OXFORD AND IBH.
 6. ORTIAGO, J. A. R. AND SAYAO, A. S. F. J. - HANDBOOK OF SLOPE STABILISATION, 2004.



APM Civil Engineering

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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
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