

(AG513) Reservoir and Farm Pond Design

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Unit 1

Earthen embankments - functions, advantages and disadvantages, classification – hydraulic fill and rolled fill dams - homogeneous, zoned and diaphragm type;

Unit II

Foundation requirements, grouting, seepage through dams - estimation of seepage discharge, location of seepage/phreatic line by graphical and analytical methods, flow-net and its properties

Unit III

seepage pressure, seepage line in composite earth embankments, drainage filters, piping and its causes;

Unit IV

Design and construction of earthen dam, stability of earthen embankments against failure by tension, overturning, sliding etc; stability of slopes - analysis of failure by slice method

Unit V

Types of reservoirs and farm ponds, design and estimation of earth work; cost analysis.

TEXT BOOKS:

1. Alam Singh and Chowdhary, G. R. (1997). *Soil Engineering – in Theory and Practice. Part 3*. CBS Publishers and Distributors. New Delhi.
2. Bowles, Joseph. E. (1984). *Soil Mechanics and Foundation Engineering*. Mc Graw – Hill International Book Company.
3. Suresh, R. (1997). *Soil and water Conservation Engineering*. Standard Publishers and Distributors. Ludhiana.
4. Murty, V. V. N. (1998). *Land and Water management Engineering* (2 ed.). Kalyani Publishers.

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1. ICAR. (1956-1971). *Soil and Water Conservation Research in India*.
2. Punmia, B.C. (1981). *Soil Mechanics and Foundations*. Standard Book House, Delhi.
3. Schwab, G.O, Frevert, R.K., Edminister T.W., and Barnes, K.K. (1993). *Soil and water conservation engineering*. John Wiley and sons.
4. Singh, G., Venkataraman, C., Sastri, C., Joshi, B.P. (1985). *Manual of Soil Water conservation practices*. Oxford IBM Publishing Co Pvt.Ltd. New Delhi.