(AG511) Gully and Ravine Control Structures	L	T	P	To	C
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Unit 1

Introduction; floods - causes of occurrence, flood classification - probable maximum flood, standard project flood

Unit II

Design flood, flood estimation - methods of estimation; estimation of flood peak - Rational method, empirical methods, Unit hydrograph method;

Unit III

Statistics in hydrology, flood frequency methods - Log normal, Gumbel' s extreme value, Log-Pearson type-III distribution; depth-area-duration analysis;

Unit IV

flood forecasting, flood routing – channel routing, Muskingum method, reservoir routing, modified Pul' s method; flood control - history of flood control, structural and non-structural methods of flood control measures,

Unit V

storage and detention reservoirs, levees, channel improvement; Gulley erosion and its control; soil erosion and sediment control measures; river training works, planning of flood control projects and their economics.

TEXT BOOKS:

1. Dhruvanarayana, V. V. (1993). *Soil and Water Conservation Research in India.* ICAR, New Delhi.
2. Goldman, S. J, Jackson K. and Bursztynsky, T. A. (1986). *Erosion and Sediment Control Handbook.* McGraw- Hill Book Company.
3. Murthy, V.V.N. (1998). *Land and Water Management.* Kalyani Publishing, New Delhi.

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1. Suresh, R. (1997). *Soil and water Conservation Engineering.* Standard Publishers and Distributors.
2. USBR. (1978). *Design of Small Canal Structures.* U S Bureau of Reclamation.
3. USBR. (1987). *Design of Small Dams.* US Bureau of Reclamation.