

FOREWORD

Rapid population growth with overall prosperity and consequent increase in water demand for agricultural, industrial, domestic and other sectors have severely stressed our replenishable freshwater resources, both in terms of quantity and quality. Accurate assessment and sustainable integrated water resources development and management, aided by new scientific insights is essential for socio-economic development of the country. Hydrological investigations are important for planning, design and operation of water resources projects as well as for determination of the extent and availability of surface and ground water resources in order to utilize the available water optimally.

The technology transfer and capacity building have been important technical activities of National Institute of Hydrology for dissemination of knowledge to various stake holders in the area of hydrology and water resources. Recognizing the importance of hydrological investigation techniques, National Institute of Hydrology, Roorkee used to organize a series of such training courses on this important topic for the field engineers and researchers working in the area of water resources planning, development and management. The present course is next in that series. The training course is being organized under Purpose Driven Study (PDS), a sub-component of HP-II Project funded by World Bank. The main objective of this course is to impart knowledge to the field engineers, officers, researchers, managers and academicians about the recent developments in the field of hydrological investigations with a special emphasis on addressing the problems and issues of the water quality management.

The course material is the compilation of the various lectures being delivered by the Scientists of the Institute during the training course. Sincere efforts have been made by the organizers in compiling the lecture notes prepared by the experts of the relevant fields. An excellent effort has been made by the course coordinator, Dr. M. S. Rao, for bringing the course material in the form of bounded Volume. Without his personal interest and painstaking efforts, it was not possible to have such a high standard course material. I am sure that the participants would find the course material very much useful particularly for the applications of advanced hydrological investigation techniques during the technical studies to address the hydrological and water resources problems and issues.

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