

6th Semester		Water and Wastewater Engineering	L-T-P 3-0-0	3 CREDITS
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Module – I**(08 Hrs)**

General requirement for water supply, sources, quality of water, intake, pumping and transportation of water.

Module – II**(06 Hrs)**

Physical, chemical and biological characteristics of water and their significance, water quality criteria, water borne diseases, natural purification of water sources.

Module – III**(08 Hrs)**

Engineered systems for water treatment: aeration, sedimentation, softening coagulation, filtration, adsorption, ion exchange, and disinfection. Design of water distribution system.

Module – IV**(08 Hrs)**

Generation and collection of wastewaters, sanitary, storm and combined sewerage systems, quantities of sanitary waste and storm water, design of sewerage system Primary, secondary and tertiary treatment of wastewater. Wastewater disposal standards

Module – V**(10 Hrs)**

Basic of microbiology. Biological wastewater treatment system : Aerobic processes activated sludge process and its modifications, trickling filter, RBC, Anaerobic Processes conventional anaerobic digester, High rate and hybrid anaerobic reactors, Sludge digestion and handling, Disposal of effluent and sludge, Design problems on water distribution, sewerage, water treatment units, wastewater treatment units and sludge digestion.

Books:

1. Water Supply Engineering-Environmental Engineering v.1 by S.K.Garg, Khanna Publishers
2. Sewage Disposal and Air Pollution Engineering - Environmental Engineering v.2 by S.K.Garg, Khanna Publishers
3. Water Supply and Sanitary Engineering by B.S.Birdi Dhanpat Rai Publishing Company
4. Water Supply Engineering by B. C. Punmia and A.K.Jain, Laxmi Publications
5. Water and Wastewater Technology by M.J.Hammer, PHI

Digital Learning Resources:

Course Name: WATER SUPPLY ENGINEERING, Wastewater Treatment and Recycling

Course Link: <https://nptel.ac.in/courses/105/105/105105201>

(<https://nptel.ac.in/courses/105/105/105105178/>)

Course Instructor: PROF. MANOJ KUMAR TIWARI Department of Civil Engineering IIT Kharagpur