Sewage and Wastewater Treatment System - sewage characteristics, primary, secondary and tertiary treatments, efficiency measurements, and environmental pollution control. Biofilms- wastewater treatment, development and Kinetics, aerobic biofilms.

Industrial Wastewater Treatment - primary, secondary, advanced, physical, chemical and biological unit processes, aerobic, anaerobic attached and suspended growth processes, sources of heavy metal pollution. Advanced wastewater treatment - carbon adsorption, ion exchange, membrane processes and pollution control in selected process industries – tannery, textile, paper, sugar and distillery units.

Bioremediation - in situ and ex situ bioremediation, constrains, priorities and evaluating bioremediation, bioremediation of VOCs, biodegradation, factors affecting process of biodegradation - methods in determining contaminant availability for biodegradation, microbial interactions with inorganic pollutants, microbial metal resistance, microbial transformation, accumulation and concentration of metals, and heavy metal pollution.

TEXT BOOKS / REFERENCES: