

國立臺北大學自然資源與環境管理研究所

107 學年度第一學期『環境工程科學概論』

課程講義(10)：水污染與水質管理概論
Introduction to Water Pollution and Water Quality Management

- INTRODUCTION
 - Water Bodies and Water Uses => Water Quality Standards 水體水質分類標準
 - Self Clarification, Self Purification, Assimilation Capacity, Carrying Capacity
 - Water Quality and River Pollution Index => Effluent Standards 放流水標準
 - Total Maximum Daily Loads (TMDLs) vs. Total Mass Control
 - Water Reclamation and Water Reuse =>再生水資源發展條例
- WATER POLLUTANTS AND THEIR SOURCES
 - Point Sources vs. Non-point Sources
 - Oxygen-Demanding Material: Organic Pollutants
 - Nutrients => N&P => CTSI (卡爾森指數, Carlson trophic state index)
 - Pathogenic Organisms: Virus, Bacteria, Protozoa...
 - Suspended Solid => SS =>Particulate Matter (PM) and TSP
 - Salts (Dissolved Solid) => TDS and Salinity
 - Toxic Metals and Toxic Organic Compounds
 - Heavy Metals and Heat => Arsenic, 核電廠溫排水=>燃煤電廠海水法除硫
- WATER QUALITY MANAGEMENT IN RIVERS
 - Effect of Oxygen-Demanding Wastes on Rivers
 - Biochemical Oxygen Demand (BOD)
 - ⇒Chemical Oxygen Demand (COD)
 - ⇒Decay (Aerobic Decomposition): First Order Reaction
 - Dissolved Oxygen and Water Quality: Temperature and Indicator Species
 - Laboratory Measurement of BOD => 5-Day BOD
 - DO Sag Curve (De-oxygenation and Re-aeration)
- WATER QUALITY MANAGEMENT IN OTHER WATER BODIES
 - Water Quality Management in Lakes
 - Water Quality Management in Estuaries
 - Water Quality Management in Oceans
- HOMEWORK #6 (併入期中考): 請收集相關法規以定義「飲用水水源水質保護區」與「自來水水質水量保護區」, 繳交之作業內容請說明依循之法律名稱與對應條次、法律條文之定義內容、以及劃設現況等。