

國立臺北大學自然資源與環境管理研究所

100 學年度第一學期『環境工程科學概論』

課程講義(+): 水污染與水質管理概論

- INTRODUCTION
 - Water Bodies and Water Uses => 水體水質分類標準
 - Self Clarification, Self Purification, Assimilation Capacity, Carrying Capacity
 - Water Quality and River Pollution Index => 放流水標準

- WATER POLLUTANTS AND THEIR SOURCES
 - Point Sources vs. Non-point Sources
 - Oxygen-Demanding Material: Organic Pollutants
 - Nutrients => N&P => Limiting Nutrient => CTSI
 - 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
 - Endocrine-Disrupting Chemicals
 - Arsenic and Heat => Heavy Metals

- 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 #5 (No Hand-ins Required): 請瀏覽環保署水質淨化「現地處理 On-site treatment」網站(<http://wqp.epa.gov.tw/ecological/>), 以彙整其介紹之「生態工程」技術, 並比較該類「生態工程」與「生態工法」之差異。