國立臺北大學自然資源與環境管理研究所

101 學年度第一學期『環境工程科學概論』

課程講義(八)：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 => 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
  - □ 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 (2012/11/13 Due)：請問國內現行法規針對公共給水水源規範有那二類的水源保護區？其中央主管機關又分屬那些單位？請概要評析、比較該二類水源保護區之管理機制，並研提後續管理機制之改善建議。