

國立臺北大學自然資源與環境管理研究所

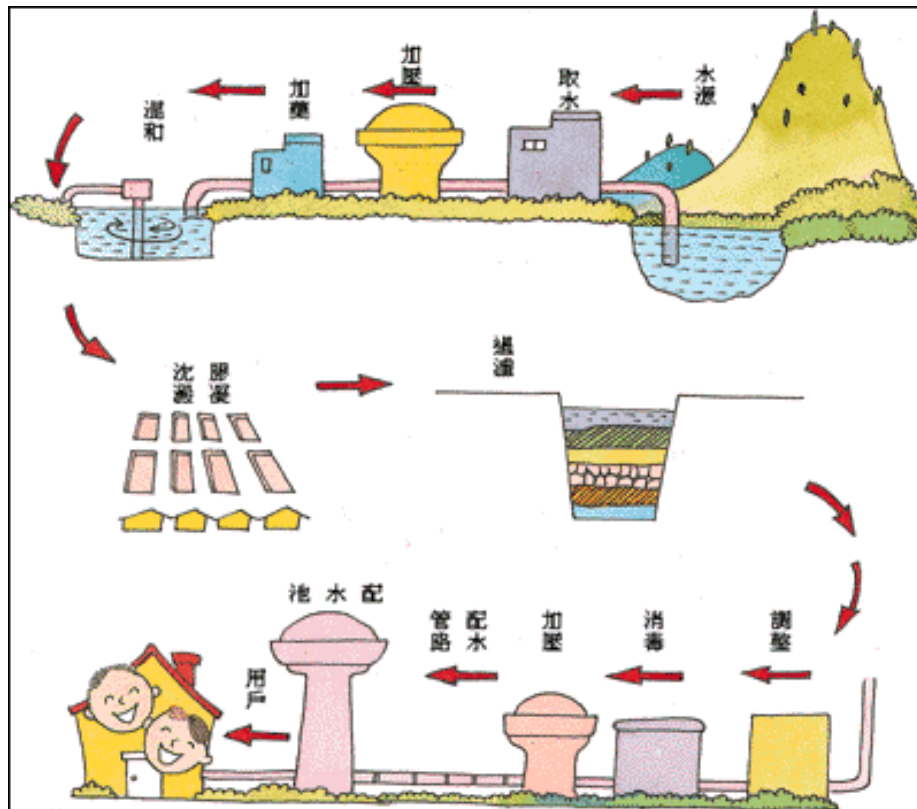
107 學年度第一學期『環境工程科學概論』

課程講義(11)：水處理技術概要

Introduction to Water Pollution and Water Quality Management

- INTRODUCTION
 - Public Water Supply, Sewage Systems, Industrial Wastewater, Water Reuse
 - Tap Water vs. Drinking Water => 自來水、飲用水
 - ⇒ Infrastructure vs. Environmental Protection => Public Utility
 - ⇒ 社區自設公共給水設備、簡易自來水
 - Drinking Water Quality 飲用水水質 vs. Tap Water Quality Standard
 - ⇒ [飲用水水質標準](#)
 - ⇒ [自來水水質標準](#)
 - ⇒ 大高雄地區自來水後續改善工程計畫、板新水廠二期、翡翠水庫原水專管
 - Water Bill
 - ⇒ 台灣自來水公司：[水費](#)、[水價調整](#)
 - ⇒ 台北自來水事業處：[水費](#)、[水價調整](#)
 - 水源保護區劃設、管理、回饋
 - Waste Water Treatment and Sewage Systems
 - ⇒ 民生污水處理=>[水質自然淨化工法](#)
 - ⇒ 工業廢水處理=>工業區污水處理廠
 - 中水道系統、雨水收集利用、民生污水回收再利用、再生水資源
 - ⇒ [建築物生活污水回收再利用建議事項](#)
 - ⇒ [再生水資源發展條例](#) => [再生水水質標準及使用遵行辦法](#)
- WATER SUPPLY ENGINEERING
 - 自來水工程、給水工程、上水道工程
 - ⇒ 集水工程 Collection Works
 - ⇒ 輸水工程 Transmission Works
 - ⇒ 抽水工程 Pumping Works
 - ⇒ 淨水工程 Purification Works
 - ⇒ 配水工程 Distribution Works
- WATER TREATMENT ENGINEERING (PURIFICATION WORKS)
 - Water Treatment Units
 - ⇒ Gas Transfer; Ion Transfer; Solid Transfer
 - ⇒ Solute Stabilization => Desalination
 - ⇒ Sanitation, Hygiene and Aesthetical Considerations (Potability)
 - Water Treatment Components (Steps)

- ⇒Gridding and Screening
- ⇒Coagulation (混凝) and Flocculation (膠凝) ⇒ PAC
- ⇒Sedimentation ⇒ Primary and Secondary (even Tertiary sedimentation)
- ⇒Filtration and Disinfection ⇒ THM (Tri-Halogen Methane)
- Advanced Water Treatment: Potability and other Aesthetical Considerations
 - ⇒Ion Exchange; Reverse Osmosis (RO); Ultra-filtration: Membrane; UV & O₃
 - ⇒[台水公司水處理業務簡介](#)



自來水到我家：取水、導水、淨水、送(配)水
 (<https://www.water.gov.tw/ct.aspx?xItem=7343&ctNode=776&mp=1>)

- SEWAGE ENGINEERING AND WASTEWATER TREATMENT ENGINEERING
 - Sewage Systems or Sewers: Sanitary Wastewater and Stormwater Runoff
 - ⇒Combined vs. Separate Sewage Systems
 - ⇒Pipelines vs. Channels: Pipe Flow vs. Open Channel (Open Surface) Flow
 - Classification of Wastewater Treatment Plants
 - ⇒Primary Treatment 一級處理
 - ⇒Secondary (Biological) Treatment 二級 (生物) 處理
 - ⇒Tertiary (Advanced) Treatment 三級 (高級) 處理
 - Sludge Treatment
 - ⇒Anaerobic Digestion; Dewatering and Drying ⇒ Water Content; Disposal
 - ⇒Sludge and Biomass: Integrated Wastewater Treatment Plant
 - Effluent Standards and Emerging Pollutants ⇒ Water Pollution Fee