

課程名稱(中文)：	水文學
先修科目或先備能力：	無
課程概述：	This course emphasizes on the engineering aspect of surface water, including precipitation, infiltration, runoff, and flood routing. Attention is paid to techniques for the measurement and collection of data and the mathematical models of hydrological systems based on principles of physics and statistical analysis. The planning and management of watershed are also covered using the techniques of operational research.
學習目標：	The students will be able to make engineering design computations and check, design and prepare civil engineering plans.
教科書：	Patra, K. C., 2001, Hydrology and Water Resources Engineering, Alpha Science International Ltd., Pangbourne, UK. (請尊重智慧財產權，不得非法影印教師指定之教科書籍)

## 教學要點概述：

1. 教材編選： 自編教材  教科書作者提供

2. 教學方法： 投影片講述  板書講述

3. 評量方法： 上課點名 0%， 小考 20%， 作業 0%， 程式實作 0%，  
 實習報告 0%， 專案 0%， 期中考 40%， 期末考 40%，  
 期末報告 0%， 其它 0%

4. 教學資源： 課程網站  教材電子檔供下載  實習網站

5. 教學相關配合事項：學期成績之上課點名、小考及作業三項合併 20%

課程進度：

第一週：Precipitation and Loss: Measurement of Rainfall and Network Design

第二週：Precipitation and Loss: Rainfall Data Processing

第三週：Precipitation and Loss: Design Storm

第四週：Precipitation and Loss: Evaporation and Evapotranspiration

第五週：Precipitation and Loss: Interception, Depression Storage and Infiltration

第六週：Stream Flow: Basin

第七週：Stream Flow: Stage Measurement

第八週：Stream Flow: Discharge Measurement

第九週：Hydrograph: Introduction to Hydrograph

第十週：Hydrograph: Unit Hydrograph

第十一週：Hydrograph: S-Hydrograph

第十二週：Hydrograph: Instantaneous Unit Hydrograph

第十三週：Hydrograph: Synthetic Unit Hydrograph

第十四週：Hydrograph: Dimensionless Unit Hydrograph

第十五週：Design Flood and Flood Routing: Concepts of Design Flood

第十六週：Design Flood and Flood Routing: Flood Peak Estimation

第十七週：Design Flood and Flood Routing: Hydrologic Channel Routing

第十八週：Design Flood and Flood Routing: Hydrologic Reservoir Routing