

## 99-2 Preliminary Syllabus, Da-Yeh Univ

Information			
Title	環境化學	Serial No. / ID	1462 / EVI2016
Dept.	環境工程學系	School System / Class	大學日間部3年1班
Lecturer	施英隆	Full or Part-time	專任
Required / Credit	Required / 3	Graduate Class	No
Time / Place	(一)234 / H571	Language	Chinese

Introduction
<p>This course is intended to introduce students the principles of environmental-chemistry. Lecture materials, outlined below, will provide students with a clear and thorough understanding of the theories environmental chemistry and the chemistry underlying our modern environmental problems. In addition, to study the sources, reactions, transport, effects, and fates of chemical species in water, soil and air environment.</p> <ol style="list-style-type: none"> <li>Students can transform basic chemical knowledge into engineer chemistry/.</li> <li>Students are familiar with the sources, reactions, transport, effects, and fates of chemical species in water, soil and air environment.</li> <li>Students have enough knowledge to acquire various relevant technical license.</li> </ol>

Outline
<ol style="list-style-type: none"> <li>Basic chemistry review</li> <li>Chemical Equilibrium               <ul style="list-style-type: none"> <li>? Dynamic Nutree ?Thermodynamic basis</li> <li>?Enthalpy and Temperature dependence</li> <li>? Nonideal Solution</li> </ul> </li> <li>Chemical Kinetics:               <ul style="list-style-type: none"> <li>? Stoichiometry,Rate laws. Determination of rates expressions? BOD Model,Iron and Magnanese chemistry.</li> </ul> </li> <li>Acid-Base Equilibria               <ul style="list-style-type: none"> <li>? concepts. Acid-Base strength,pH and its measurements? Analytical Solutions to acid-base equilibrium, Equilibrium Diagram. Carbonic Acid system, alkalinity,Acidity,Buffer capacity</li> </ul> </li> <li>Oxidation-Reduction Reaction               <ul style="list-style-type: none"> <li>Electrochemical Reactions, Redox. Equilibria?P.E. as a master variable, application to waste water treatment</li> </ul> </li> <li>Solubility Equilibria               <ul style="list-style-type: none"> <li>? Solubility Equilibrium for slightly soluble salts?Effect of other solutes on salt solubilities?application of solubility equilibria in heavy metal and Fluoride Removal</li> </ul> </li> </ol>

Prerequisite

General Chemistry, analytical chemistry